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Communication And People
With Severe Intellectual Disabilities

Trevor A McDonald

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Abstract

This study is concerned with communication assessment and intervention with people with severe intellectual disabilities. It proposes that since communication arises as a result of people interacting in social contexts then that is where it should be assessed. To this end, a number of observational methods were designed to assess the communication skills of four people with severe intellectual disabilities as observed in their interactions with others.

On the basis of the assessments completed, interventions comprising staff training and the introduction of augmentative communication strategies took place.

Four people with severe intellectual disabilities and all of the staff who worked with them participated in this study. Observations were taken over three phases. During the first 12 week phase approximately 17 hours of observations were undertaken. Each observation was timetabled to cover 10 minutes of each half hour of an individual's day. The data gathered formed the basis of communication profiles written on each of the disabled participants. At the end of this phase, staff training took place in one setting and four weeks later, in the second setting. In the second phase, a further three hours of observation was completed at regular intervals throughout an individual's day over 12 weeks. In the final phase, after the introduction of individual communication strategies, another two hours of observation was completed over eight weeks.

All of the staff working with the disabled participants were interviewed during phase one. The staff in one setting were interviewed as a group again after staff training and the staff in the other setting participated in facilitated discussions that were fed back to the researcher by the Manager of that service.

The results supported the thesis that the communication partner has a substantial effect on the communication behaviour of
individuals with severe disabilities. In this study, the disabled participants attempted to establish communication on a regular basis but staff were unprepared for that communication and consequently did not respond to communication opportunities when they arose. Distinct differences also emerged in the communication that occurred in each of the settings studied. These differences further highlighted the power of staff behaviour to encourage communication.

Subsequent to staff training, the staff changed their own behaviour to become more receptive to the communication opportunities created by their clients. The resulting change to the quality and quantity of communication between staff and the disabled participants was essential to the successful introduction of individually tailored augmentative communication strategies at the beginning of the final phase.

These results question the usefulness of the behavioural analyses of communication that are generally completed with people with severe disabilities. It is argued that by focusing assessment on the individual experiencing communication difficulties, the effect of the partner and the environment on communication is ignored. In addition, the use of the pre-determined codes of behaviour commonly used in these assessments restricts the gaze of the observer to the extent that they can fail to see the extent to which individuals with severe disabilities attempt communication with others.

The implications arising from this study include: the development of assessment strategies that are capable of capturing the depth of communication that exists between people with and without severe disabilities and the extent to which the communication partner enhances that communication; the need for staff training and on-going support and mentoring; quality leadership; and research to better understand the experiences and lives of people with severe intellectual disabilities.
Acknowledgements

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I would like to record my deepest thanks to my supervisors, Dr. Anne Bray and Associate Professor Keith Ballard for their unfailing support, wise counsel, encouragement and friendship.

Thanks also are due to Tracey Moore and Shelley Wilson who did a great deal of the data collection and for their participation in the interventions, and interviewing. My thanks must also go to Ros Cavanagh for the transcription of interview tapes and for her good humour and practical support throughout the preparation of this work.

I am especially grateful to the colleagues and friends who have helped me through this by reading drafts, making suggestions and providing on-going encouragement. In particular thanks must go to Dr. Jude MacArthur, Adrienne Tomkins and Clara Narbey.

The love and support, both emotional and practical that my partner Kelly has given me over the four years that this thesis has taken has provided me with the energy to complete the work. He has accepted my preoccupation, ignored my moods, provided succour, believed in me when I did not and has proof read and commented on the work as it progressed. He has my deepest thanks.

Dean, Glenn, Helen, Vivienne and the staff of the vocational and residential settings agreed to have us in their lives for 10 months. During this time we watched everything they did, listened to all that they said and wrote a good bit of it down. Without their support, this study could not have been completed. For that I would like to record my heartfelt thanks.
It is to Dean, Glenn, Helen and Vivienne and to all those other people with severe disabilities who struggle to make us understand them, that I dedicate this work.
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CHAPTER ONE

Introduction

Background to the Study

As is the case for all research, the values and the beliefs of the researcher will affect the way in which data are collected and subsequently handled. My experience as a teacher who has spent a number of years working with people with severe disabilities has inevitably had an effect on this piece of research. No claim to objectivity can take that experience away. Instead, by being open about my past and by explaining how my experience influenced not only the topic of the study but the direction it took, I can provide the critical reader with an understanding of how I arrived at the conclusions I did, both during the data collection and in the later analysis.

I had started my working life as a primary school teacher and followed this with experience in a secondary school. However, I have had a long term interest in special education and so in 1985 applied for and was appointed to teach in a segregated unit for students with intellectual disabilities in a secondary school. Realising that I had taken on a little more than I was equipped to do, I enrolled for a post-graduate teaching qualification in the "education of the handicapped" in 1986. At the time, this was a wonderful course for me. It equipped me with a whole range of strategies to assess people, to develop programmes, to manage people and to write reports. I did not return to my job, instead I was seconded to work as an adviser to teachers and schools working with students with disabilities.

In the course of this advisory work I undertook two special projects. The first was as a resource teacher for children and young people with severe communication difficulties (autism). This involved working with teachers to more adequately meet their students' educational and social needs. The second project was as a liaison teacher. In 1990 in New Zealand, changes in the Education Act 1989 came into force. For the first time those children and young people who had been denied access to education as a result of the severity of their disability, were granted the same rights as other New Zealanders to free state education between
the ages of five and 20 years. This position required me to liaise with schools, secure funding from a Ministry of Education bulk grant, apply for staffing entitlements and appoint staff, as well as to complete assessments and to develop programmes for these students' transition and education.

These two projects were watersheds for me. I had not really heard of autism before I was asked to take on the work and I had never even seen people with severe and profound intellectual disabilities, nor did I have any idea about what to do with "them". In the course of my early work I was amazed at the lack of information there was in New Zealand about education for people whose impairments were so severe. I also wanted assessment tools. I was trained in a behavioural model and I felt that I needed a starting point on which to base my interventions. However, it quickly became apparent that I did not want psychometric measures: they only told me that the people taking them could not perform any of the tasks involved. I wanted assessment material that gave me information about people's lives and skills from which I could then develop programmes.

Early on in this work, and despite the lack of assessment material, I was struck by the certainty with which people would make pronouncements about the people with whom I was supposed to be working. On one occasion a teacher said in front of a young man, "Why should this one come to school, he can't do anything!" As my jaw dropped open I saw this young man's eyes fill with tears. At other times I saw people scowl at those who made negative comments about them and on one occasion, when I responded to the negative statement with, "How do you know?" I saw that the eyes of the woman being talked about were locked on to me.

Help came in the person of Professor Luanna Meyer from Syracuse University who was the Roy McKenzie Visiting Professor with the University of Otago in 1988. She gave me an understanding about assessment and teaching that was relevant to people with severe disabilities, but most of all she talked about people as if they were human. She also made me wake up to the fact that by consigning people with disabilities to special and segregated lives, we ensured that
they remained special and segregated people with few opportunities to
grow and develop.

I went back to my work with a great deal more purpose. I began to
meet with and talk to parents, to members of the Autistic Association,
and to the medical professionals who had previously provided much of
the care that had been offered. Many of those people talked about the
difficulties that they had with the behaviour of their children or wards.
It seemed to me that the major issue was with communication, that
what was happening was that these people were struggling to get their
points across and that no one was listening. At this point I first heard of
Professor Anne Donnellan who had alerted us to the communicative
function of aberrant behaviour (Donnellan, Mirenda, Mesaros, &
Fassbender, 1984). This work made so much sense and it seemed to be
about the people with whom I was engaged.

There was another issue however. I remember talking with a father for
a long time about the difficulties he and his wife had whenever their
daughter Sarah heard that they were going to be travelling away. If the
family did not depart there and then, she would lose control and
scream, hit herself and others and damage property. After talking
around the issue, it seemed that Sarah had some difficulties in
understanding the concept of time and could not cope with what she
saw as people not doing that which they said they would. After we had
talked about this possibility, Sarah's father thought that it would be a
great idea for school to teach her to tell the time so that she could deal
with the anxiety that we thought was causing her behaviour. I made a
timetable for her. I spent hours preparing a board that she could check
whenever she felt anxious, that others could use to show her when
things were happening and that gave her the opportunity to match the
times that things were going to happen with the time on the clock. I
have since used this strategy many times with good success to help
children with autism to deal with the anxiety that a break in routine
causes. However, it did not work in Sarah's case. Although the class
teacher had agreed that it would be a great idea and that she would like
to try it, the teacher put the timetable behind her desk and never used
it.
I was later employed as the Deputy Principal of a special school for people with intellectual disabilities. I continued my work with communication and focused my attention on people with severe disabilities. It seemed to me that these people did so much that many other teachers did not see and did not report in their files. In the classes in which I worked where teachers wanted to interact with their students, we made great gains in communication; in others, nothing happened. Even with the advent of facilitated communication and all of the controversy that went with it, things changed in some of the rooms I visited and not in others.

It seemed to me that communication is the thing that makes us human; it is something that we all have the capacity to do, whether it is intentional or not. In respect of severe disability, there is a paucity of information about communication. Many people believe that it does not happen with some people. I remember a nurse being amazed one day as she held a small boy in school assembly. This child had epilepsy that was largely uncontrolled, he had no voluntary movement, and he was said to be cortically blind and to have insufficient brain function to interpret his surroundings. The nurse had been one of the people who saw no good coming from school for her charges, but as she sat there, and as the school kapa haka group (NZ Maori performing arts group) began their performance, the small boy calmed and relaxed in her arms. She said afterwards that she had the feeling that he was keenly aware of what was happening around him.

The present study has grown out of my experience as a teacher and an adviser. I had quickly learned that there was a great deal more to communication with people with severe disability than met the casual eye. I learned that the communication partner had a tremendous amount to do with the success or otherwise of communication. I also knew that to get engaged in interaction with people with severe disabilities it was necessary to be a keen observer of those people as the differences between us often precluded the easy interpretation of communicative acts. Most importantly I knew that once I understood how people were trying to tell me things, the rewards were rich.
The Present Study

In beginning this research I wanted to understand and describe how it was that people with severe intellectual disabilities attempted to communicate with others in the course of their everyday lives. I also wanted to identify how the environment in which people lived and worked made a difference to the communication opportunities that they had. In order to achieve these ends, it was important that I worked with people who had had little access to communication interventions and whose carers were willing to be involved. It was intended also that the information collected on people's communication would then form the basis for the development and introduction of individual communication strategies. To this end, the participants in this study were four adults with severe intellectual disabilities and all of the staff with whom they lived and worked.

The provision of communication for people with severe disabilities has not had a great deal of research attention (McLean, Brady, & McLean, 1996). It is also an area of significant need given the difficulties with communication and behaviour that have been described. The potential to reflect on my own experience, to add to the limited body of knowledge and to effect some positive change for the participants in this study and in the field generally, were all important to me.

Most of the research that has been completed in the field of communication and severe disability has focused on children (eg. Guess, Roberts, Siegel-Causey, Ault, Guy, & Thompson, 1993; Houghton, Bronicki, & Guess, 1987)). Despite there being numbers of qualitative differences in the ways in which children and adults are treated with respect to communication opportunity (Houghton et al., 1987) and between their life experiences, there has been an assumption that what may be true for children will also be true for adults with severe disabilities. To be able to contribute to the literature on communication and severe disability at this time by focusing on adults who had not had access to communication intervention was also seen as particularly relevant. As a result of the moves towards deinstitutionalisation and community integration taking place in New Zealand and elsewhere, there are now much larger numbers of people coming into contact with
people with severe disabilities. If we are sincere about inclusion, we need to have some ways of establishing and maintaining relationships with people whose needs and experiences are very different from those of the typical members of our communities.

**Organisation of the Thesis**

This thesis is divided into a further eight chapters. Chapter two discusses the literature with respect to communication assessment and intervention. It describes the assumptions that have driven the development of assessment strategies and how the belief that people with severe disabilities do not communicate unless taught to do so, has driven the interventions used in this field. The chapter argues that everybody, regardless of their impairment, communicates in some ways in the course of their daily lives. The challenge for assessment is to determine how communication is taking place. Intervention should therefore begin with that understanding.

Chapter three discusses the role of social interaction and relationships in the acquisition of communication skills and understanding between people with and without severe disabilities. The literature has noted that social skills training has frequently taken place in clinical contexts in which the mechanics of interaction have been taught. It is argued that successful social interaction, and ultimately communication, relies on people having some empathy with each other, on being able to interpret subtle social behaviours and on friendship. These behaviours cannot be taught out of social contexts. Relationships therefore constitute a powerful medium in which people can learn about each other's interaction and communication skills and styles.

The experiences of adults who use services is the topic of chapter four. Research on adults with severe disabilities has argued that these people have had few opportunities to make choices or decisions or to self-determine. Given that many people continue to live segregated lives, albeit in community settings, there are significantly limited opportunities to develop the skills to exercise preferences and to make decisions.
Chapter five addresses methodological issues. Specifically, it is argued that if communication is to be seen as an intensely social experience, then it is within this context that it should be studied. The chapter describes a valid methodological framework to address questions about communication in social, emotional and physical contexts.

Chapter six presents a detailed description of the measures developed and the procedures followed in gathering the qualitative and the quantitative data for this study. Also outlined are the ways in which data analysis, which was conducted simultaneously with data collection, affected the progress of the study and the information sought.

The results are presented in chapter seven. Information about the disabled participants is presented in the form of case studies. These results describe the strategies that individuals used to interact with others in their social and physical worlds. Also detailed are the supports available to the disabled participants to assist in their communication in their social and physical contexts. Following the case studies, the results of staff interviews and training are described.

The discussion is contained in chapter eight. It discusses the results in light of the literature on communication assessment and intervention and people with severe intellectual disabilities.

The thesis concludes with chapter nine which outlines the implications arising from the study. Issues are raised with respect to assessments and our understandings about severe disability, about support for staff and leadership in services. The chapter closes with a critical reflection on the methods used in this study.
**CHAPTER TWO**

**Communication Assessment and Intervention with People with Severe Disabilities**

Traditional communication assessment and intervention with people with severe disabilities has assumed that without the intervention of non-disabled specialists, people with severe disabilities will have little to communicate about and nothing to communicate with. Assessment has therefore focused on identifying the individual's limitations while intervention has concentrated on the creation of opportunities in which new strategies, vocabularies and scripts could be acquired and practised.

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**Introduction**

Communication is about the "transmission of information between two or more individuals" (Jackson, 1993, p. 143) in culturally acknowledged and acceptable ways in order to get or gain a message, to interact, to influence one's context, and to use a variety of forms to achieve such ends (Butterfield & Arthur, 1995).

It is now accepted that everybody communicates in some way (Beukelman & Mirenda, 1992) and that all behaviour can be considered to have some communicative value (Baumgart, Johnson, & Helmstetter, 1990). People typically develop formal communication skills by engaging in communicative acts, which, over time, replace less obvious communicative behaviours (Ferguson, 1994). Essential to this development are multiple opportunities for communicators to experience the achievement of shared understanding, or as Rogoff (1990, p. 71) describes it, intersubjectivity.

Communication presumes intersubjectivity -that is, shared understanding based on a common focus of attention and some shared presuppositions that form the ground for communication. Trevarthen (1980) defines intersubjectivity as "both recognition and control of cooperative intentions and joint patterns of awareness".

As formal communication skills develop and opportunities to communicate are created, communicators make associations between the symbols of communication (usually language) and emotions, real...
objects, actions and events. In this respect, communication is the primary means by which people demonstrate their sociability, reinforce their relationships and secure and maintain their place or membership in any community. As Ferguson (1994, p10) reported,

Membership is not achieved cumulatively in bits and pieces of acquired capacity or certain interactions rather than others. Rather, it emerges from the actions between people that are borne of interest, belief, and trust.

People who are identified as having severe intellectual disabilities often do not acquire an expressive or spoken language facility. It has been assumed that the failure to speak was a demonstration of the failure to communicate or to think (Ferguson, 1994), or to have anything to communicate about (Falvey, 1986). More recently, researchers have come to accept that this premise is incorrect. People with severe disabilities and communication difficulties have been shown to use a wide variety of idiosyncratic strategies, including physical behaviours, with which to attempt communication (Baumgart et al., 1990; Donnellan et al., 1984).

In addition to the recognition that people with severe communication disabilities may use a range of communication behaviours (McLean et al., 1996), there is now a general consensus in the literature that the communication strategies used by people with severe disabilities can be enhanced by intervention (eg. Alwell, Hunt, Goetz, & Sailor, 1989; Kaiser & Goetz, 1993; Kaiser, Ostrosky, & Alpert, 1993; Zilber, Rawlings, & Shaddock, 1994). If communication intervention is a priority, some assessment of the communication skills of the individual in question is necessary.

To make such an assessment, it has been suggested that it is critical to identify the form and parameters of the communication behaviours an individual uses and to determine the purposes to which they are put, in the contexts in which they are demonstrated (Beukelman & Mirenda, 1992; Butterfield, Arthur, & Sigafoos, 1995). However, communication is an intensely social experience; it is the means by which people secure membership in their communities. Social situations require that people form and maintain relationships, that they become aware of communication partners' preferences and that they learn from their
past experiences with others. It can be argued therefore, that communication is not something which can be studied adequately by only isolating specific acts from which specific behaviours or forms can be described. Given this situation, it is not always possible or appropriate to try to identify the specific functions of an act from the immediate context in which communication occurs. An understanding of the communication in which any individual engages must emerge as a result of the analysis of the multiple interactions in which communicators engage. Central to this is an understanding of how communication partners "invite, accept and respond to communicative acts by people with severe disabilities" (Ferguson, 1994, p. 9) as well as a recognition of the role of the environment.

This chapter describes and critiques the strategies discussed in the literature as being the most appropriate for developing an understanding of the communication of people with severe disabilities. It argues that traditional assessment methods provide insufficient and unreliable information to enable an understanding of the dynamic nature of the communication used by people with severe communication disabilities. It is further argued that standard intervention models which concentrate on the development of requesting and responding skills fail to provide opportunities for individuals with communication difficulties to participate in social exchanges. At issue are the flawed assumptions that people with severe disabilities need to be taught to communicate and that they will be capable of interactions which satisfy only a limited number of functions.
Most people who are identified as having severe intellectual disabilities experience significant difficulties in communication also. As already noted, traditional views about intellectual disability have suggested that the communication difficulties of people with severe disabilities arise because of an inability to think and act intentionally (Ferguson, 1994; Gleason, 1993). As a result, our efforts in the field of communication with people considered to experience such difficulties have, for a significant period of time, been dominated by ideas of cognitive readiness (Reichle & Karlan, 1985; Woodyatt & Ozanne, 1994a). Consequently, many people have not been seen as candidates for communication intervention (Baumgart et al., 1990; Musselwhite & St. Louis, 1988). There has been a belief that children must acquire speech to support an “internal language” which would allow them to proceed beyond elementary cognitive developmental stages. This has informed the beliefs we hold about people who, because of severe intellectual disability, do not acquire speech. However, it has been shown that the ability of children to respond to requests has a great deal more to do with their limitations in expressive language development than the cognitive limitations they were assumed to have (Vygotsky, 1978). Despite this, there is some danger in assuming that what may be true for children with language delays is also true for adults who do not use speech. Adults who, for whatever reason, do not grow according to the "norms" of development cannot be considered to be children trapped in the bodies of adults. The significant qualitative differences in the experiences of adults and children that occur as a result of time mean, if nothing else, that adults have a deal of experience on which to base their view of the world and their behaviour which children simply do not.

As a result of the attitudes to and practices in assessment, where intervention strategies have been used with people with severe disabilities, they have generally focused on the acquisition of pre symbolic communicative skills such as eye gaze or head control (Musselwhite & St. Louis, 1988). Alternatively, simple symbolic
strategies with which to make their needs known, usually in response to the requests of others (Houghton et al., 1987) have been used. The literature has also noted that people with severe disabilities have tended not to transfer skills beyond instructional situations (Halle, 1987). This difficulty has generally been attributed to the inability of the individual, because of his or her disability, to understand the application of a skill learned in one setting to another. Not surprisingly, these assumptions have resulted in few opportunities for people described as being severely intellectually disabled to share social interaction with others, to make decisions or to exercise choice about the things that happen to them (Browder & Martin, 1986; Markova, Jahoda, Cattermole, & Woodward, 1992; Zilber et al., 1994).

More recently the literature has shown an acceptance of the idea that the social and physical environment in which an individual lives or works can either support or mitigate against communication occurring. Naturalistic settings which include naturally occurring consequences for communication have assisted individuals with severe disabilities to use communication strategies successfully (Kaiser et al., 1993). Thus, the focus has shifted from the person to the communication environment, the provision of conditions and stimuli that will encourage communication (Chadsey-Rusch, Drasgow, Reinoehl, Halle & Klingenberg, 1993; Rowland & Schweigert, 1993) and the development of communication systems that will meet their presumed communication needs (Reichle & Sigafoos, 1991). While this is seen as a forward step, it is important to note that studies in this area have largely been concerned with identifying the environmental and instructional variables that will stimulate communication (Cirrin & Rowland, 1985; Kaiser et al., 1993). This being the case, the assumption remains that without the opportunities provided by a supportive environment (Ogletree, Wetherby & Westling, 1992), or the use of specialised intervention techniques, individuals with severe disabilities will have few strategies with which to communicate (Guess et al., 1993) and nothing to communicate about.
Communication Partners

A small number of studies maintain that people with severe disabilities do respond to, and attempt to engage in, communications at a rate similar to the typical population (Ogletree et al., 1992) but that communication partners respond to few of these initiations (Bryen & McGinley, 1991; Houghton et al., 1987) or fail to maintain interactions. Where communication partners have been observed to participate in communication exchanges, significant communication gains have resulted for communicators with severe disabilities. As Ogletree et al., (1997, p. 187) reported:

...although some subjects were limited to primitive gestures to express a single function, others used points and manual signs to express up to eight functions.... (It was) suggested that this flexibility related to the frequency with which subjects communicated, specifically, that "high frequency" communicators used more sophisticated signals and expressed broader ranges of communication functions than did their "low frequency" counterparts.

As noted by Ogletree et al., (1992) all of the participants in their study used a range of strategies with which to communicate information. Those who engaged in more frequent communication acts developed more sophisticated strategies. As already reported however, most communication attempts made by people with severe intellectual disabilities go unheeded:

...regardless of age level or educational setting, classroom staff respond at extremely low rates to student initiated expressions of choice or preference in both structured and unstructured conditions (Houghton et al., 1987, p. 24).

Communication may fail to occur therefore, not as a result of the failure of the individual with severe disability to be able to think or act intentionally to initiate or respond to communication opportunities, but because of the partner's failure to recognise behaviour as having a communication function (Butterfield & Arthur, 1995). Also, people with severe disabilities frequently experience motor difficulties (Rogers, 1992) which significantly limit their abilities to use a range of movements (Ogletree et al., 1992). In addition, they may have difficulties in attending to and responding to stimuli (Guess et al., 1993), and that they may use very subtle behaviours (Peck, 1985). Given this situation, it is not surprising that a communication partner could fail to
recognise interactive behaviour when it occurs. Whatever the
topography of a behaviour however, they are frequently ignored by
those people who support individuals with severe disabilities (Houghton
et al., 1987; Peck, 1985). Along with an understanding of the
communication skills of individuals with severe disabilities, the role of
the partner is clearly critical to the success of any interaction. Despite
the "profound influence" of the partner on the "frequency, fluency and
content" of communication between non disabled people, there have
been relatively few studies which have considered the role of the
communication partner in interactions that include people with severe
disabilities (Kaiser & Goetz, 1993, p. 139).

As noted by Baumgart et al., (1990, p. 40):

"All behaviour communicates. Sometimes the individual intentionally
communicates an idea and sometimes the partner interprets the message "as
if" the individual was trying to convey a particular thought. Some
behaviours are more conventional, or more widely understood, than others."

If it is accepted that behaviour serves a communication function
(Baumgart et al., 1990) then it must also be accepted that whether or
not intent can be inferred from a person's behaviour, it has potential
meaning. People learn to communicate, and do so from a very early age,
as a result of the effect of their interactions on others and the
environment. The least dangerous assumption that can be made with
respect to people with severe disabilities is that this process will also
occur, albeit in different ways (Gleason, 1993). By engaging in the act of
communication therefore, an individual learns how their behaviour can
be used to regulate the behaviour of others, to establish joint attention
and to facilitate social interaction (Arthur & Butterfield, 1993). As the
number of opportunities increases for communicators to interact with
others, an understanding of the effects of their behaviour will also
develop. Parallel to this awareness is the development of more obvious
ways of conveying specific information (Cirrin & Rowland, 1985; Rogoff,
1990). To ensure that an assessment strategy is capable of recording
potentially communicative behaviours, it must therefore be able to
identify and record any behaviour used in the presence of a potential
communication partner as if that behaviour had communication value.
People with severe disabilities have generally been assumed to communicate at low levels. The assumption has been that their cognitive limitations have precluded communication development. However, potential communication partners have been observed to ignore many of the opportunities for communication created by those with severe disabilities. Clearly, communication is not a solo performance. Any attempt to understand an individual's communication must therefore include information on the behaviour of all of those communicators (disabled and non disabled) involved in an interaction, as well as the support that the environment provides and which might stimulate communication to occur (Rowland & Schweigert, 1993). Only with the collection of detailed contextual information can the "ongoing set of relationships in an interaction which make up an event" (Gleason, 1993, p. 165) be understood.

**Communication Intent**

As has already been noted, there is evidence that the communication initiations and responses of people with severe disabilities often go unnoticed. The literature suggests that if communication partners can identify the intent of specific behaviours, they will be more likely to respond (Arthur & Butterfield, 1993; Cirrin & Rowland, 1985). Consequently and using a range of strategies, communication assessments have been concerned to identify the functions of an individual's communication behaviour, on the basis of an analysis of the form specific behaviours take and the contexts within which they occur (Butterfield et al., 1995; Carr, Levin, McConnachie, Carlson, Kemp, & Smith, 1994). The function of a behaviour, or its intent, has usually been inferred from an analysis of the setting events and consequences of a specific behaviour. Cirrin and Rowland (1985, p. 54) noted that:

> The term "intentional" is used to describe a communicative behaviour that is directed at another for the express purpose of affecting the other's behaviour or attention. Communicative intent is a presumed mental process that may be inferred through contextual features. In order to judge a behaviour sequence as intentional, a subject must be jointly engaged in a shared activity.

The communication intents behind the behaviours demonstrated by people with severe disabilities have typically been categorised by a
narrow range of motivating variables such as attention, escape, tangibles or sensory stimulation (Carr et al., 1994), attention, escape, sensory stimulation (Iwata, Dorsey, Slifer, Bauman & Richman, 1982 in Crawford, Brockel, Schauss, & Miltenberger, 1992), demands and attention (Durand & Carr, 1987 in Crawford et al., 1992) and choice making or preferences (Alwell et al., 1989; Chadsey-Rusch & Halle, 1992; Chadsey-Rusch et al., 1993).

While it is recognised that the typical population will attempt to satisfy both their physical and emotional needs (Beukelman & Mirenda, 1992), few researchers have attempted to apply these findings to people with severe disabilities. Cirrin and Rowland (1985) found that those individuals who communicated more frequently with others did so to satisfy the same range of needs as their typical peers and used conventional communication behaviours such as signs. Low frequency communicators however, used a small range of less conventional behaviours to satisfy a limited range of needs. They noted that frequency of communication was related to complexity of communication mode and developmental level (Cirrin & Rowland, 1985).

It could be argued that "low frequency" (Cirrin & Rowland, 1985) communicators have had few opportunities in which to interact with others and a consequent lack of opportunity to develop their communication repertoire. Clearly, "what a person thinks is always subjective and never totally accessible to others" (Bogdan & Taylor, 1992, p. 281) but if that person does not use a conventional form with which to communicate, the potential to infer meaning is significantly limited. In addition, if an individual is considered to engage in the use of communicative behaviours only within the context of shared activities and for a limited range of functions, any opportunities occurring outside of these times will be lost to potential communication partners (Ogletree et al., 1992). It has already been discussed that people with severe disabilities are mostly ignored (Houghton et al., 1987) therefore, any attempted analysis of how the setting events and consequences (A-B-C analysis in Crawford et al., 1992) affect the function or interpretation of a behaviour could be easily misunderstood. As noted by Crawford et al., (1992, p. 84):
There is another possible shortcoming in this study regarding the data from the A-B-C observations. The majority of instances of stereotypic behaviour were not preceded or followed by any social interaction from staff or others and thus were scored as having a sensory function. The A-B-C observations would have been far more valuable had staff interacted more frequently with the subjects so that the relationship between the behaviour and the three other functional variables (attention, escape, tangibles) could have been assessed.

Associated with this point Houghton et al., (1987) discusses the point that even when individuals with disabilities initiate interaction themselves, the communication opportunities available to them are few. Given this situation, a person with a severe disability is likely to use the initiations made by others as an opportunity to have their own needs met, regardless of the intention of the initiator. For instance, an instruction given by one person could easily be seen as an opportunity for social interaction by another person who has previously been denied access to such an interaction.

Developmental theorists (eg. Bronfenbrenner, 1976 cited in Smith, 1992) have suggested that individuals use the sum of their experiences to establish patterns of behaviours which can then be used to influence others and their environments. In this sense, communication is a dynamic event, constantly developing and changing. What is true of a person's behaviour today may not be true tomorrow. In assuming that an analysis of the presumed setting events and consequences of a behaviour will net enough information to determine communicative intent, the potential for people with severe disabilities to learn from their past experiences and interactions with others is ignored (Gleason, 1993). In taking this perspective the potential for individuals to use the sum of their learning to act spontaneously (Halle, 1987), that is, without observable antecedents, and for people to want to communicate about numbers of things in similar settings over time is also forgotten. As Lovett (1996, p. 106) discussed:

When a person does not communicate with words, we often have a hard time explaining how we know what he or she is feeling and means. It makes sense that if a person is communicating nonverbally, then we do not have the words to describe it either. Sometimes people who know how to "read" behaviour are dismissed as projecting or making up reasons for the person's actions. I think we need to respect this process more than we have. People who live together or know one another really well do not need to be told how someone is feeling...this form of communication, though, even in the best of circumstances is subject to serious misinterpretation.
At issue is whether it is possible to attribute meaning or intent to the behaviours that an individual uses in any specific situation as a result of the setting events and consequences surrounding that behaviour. In order to ascribe intent to specific behavioural acts requires subjective judgements to be made about those behaviours (Woodyatt & Ozanne, 1994b). In order to understand the meaning behind behaviour, it is essential for observers to be familiar with the individual in question in numbers of contexts and over time. It is also essential to be open to the potential for communication to occur about a range of issues and to serve a range of needs. The reasons behind the communications of people with severe disabilities have traditionally been understood by many in the field as arising out of a relatively narrow range of intents. While it is widely accepted that all behaviour communicates (Baumgart et al., 1990), it would seem that people with severe disabilities are perceived to lack the ability both to formulate communications and to deliver the message (Goodley, 1996) using their behaviour for other than obvious contextually driven reasons. As Baumgart et al., (1990, p. 3) noted:

Within the routine of the day, choices are often made for non-verbal people because they lack the means to state their choice.

**Communication Assessment in Natural Contexts**

If people know the content of a message he or she is much better able to respond to it (Crawford et al., 1992). When people use communication strategies that are not easily understood, this is problematic. If it is accepted that people with severe disabilities learn and grow as a result of their interactions with others, then to understand the meaning behind their behaviours requires an understanding of the difficulties they experience in trying to communicate, the opportunities that they have for communication and the ways in which shared patterns of interaction contribute to the communication process. When people with and without severe disabilities learn to engage with each other in shared activities or interactions, their behaviours become directed towards mutual goals (Gleason, 1993) to the extent that they develop routines within interactions (Goode, 1994) which enable the extraction of meaning from
behaviour. In respect of communication assessment therefore, the
critical issue is the fact that an opportunity for communication has been
made by an individual. Once that point has been established, an
analysis of the patterns of behaviour used by that person to try to
establish and maintain interactions, in addition to an awareness of the
opportunities available to them, can lead to an understanding of the
meaning behind their behaviours.

The previous points are in contrast to those traditional assumptions that
would label people with severe disabilities as unable to communicate
and therefore in need of the means to establish communication with
others. If it is accepted that communication ability is present in
everybody in some form, then it is also reasonable to expect that the
best way to assist an individual to develop their communication is by
augmenting that which they already use. Before engaging in
communicative interaction therefore, some knowledge of the strategies
that an individual uses to attempt to communicate is all the information
that a potential communication partner needs. Having established
interaction and by being in a position to supplement the idiosyncratic
strategies that an individual uses with an augmentative system, the
meaning behind behaviours will emerge as a result of increased
interaction and participation.

Communication and language intervention research has been essentially
"problem driven" (Warren & Reichle, 1992, p. 5). As such it could be
argued that it has been driven by the need to deal with the behaviours
(often difficult) which have traditionally been regarded as an indication
of the pathology of people with severe disabilities (Anderson, Ernst, &
Davis, 1992). In some respects this has happened without the
development of a theory to support the premises on which assessments
and interventions are ultimately based (Warren & Reichle, 1992).
Consequently, if an interventionist is concerned with the reduction of a
specific difficult behaviour, her or his efforts will be directed towards
the identification of those stimuli that reinforce the behaviour, rather
than on a description of what an individual does within the context of
their daily lives and interactions with others. When applied to
communication generally, it could be argued that such a protocol
artificially restricts the gaze of the researcher by failing to acknowledge
the extent to which an individual may have learned from their past or may wish to exercise some influence on their present.

As discussed above, to understand an individual's communication it is essential to know what he or she does when engaging in communicative acts. Central to this is the role of the partner in any communication interaction. A number of authors (eg. Baumgart et al., 1990; Beukelman & Mirenda, 1992; Carr et al., 1994) have highlighted the importance of opportunity barriers in the assessment of communication skills. They examine the areas of policy, practice, attitude, knowledge and skill to identify difficulties. Important though these potential barriers are, they fail to account for the ways in which the behaviour of others could actually suppress the performance of individuals with severe disabilities during the assessment process. Without the response of a communication partner, individuals can only be assumed to be engaging in sensory stimulation (Crawford et al., 1992). Without on-going interaction opportunities, an individual's communication skills cannot develop beyond a rudimentary level (Cirrin & Rowland, 1985) and without the positive expectations of a communication partner, interactions are unlikely to occur at all (Bogdan & Taylor, 1992).

People with severe disabilities are often accused of failing to generalise newly taught skills to everyday environments (Hundert & Houghton, 1992). However, the contexts in which interactions occur provide numbers of cues as to the skills or behaviours that are required at specific times (Oetting & Rice, 1991). Skill development must therefore occur in the environment in which those skills will be used. Similarly, assessment must take account of the available cues which support or mitigate against communication at any one time. Communication development and social interaction are "constitutive processes" (Rogoff, 1990) and as such, the communication partner plays a critical role. As much as the initiator, it is the partner who provides opportunities for interactions to occur or to develop beyond a rudimentary stage. Typically, those without disabilities tend not to engage with people with disabilities in the normal course (Lee & Odom, 1996). Clearly then, if a potential communication partner is not receptive to the opportunities created by another, the communicator will not receive the cues necessary to contribute to an interaction, nor have the chance to use
their skills. In such a situation, assessments will fail to acknowledge the skills which individuals possess and can use under optimum conditions and they will fail to account for the ways in which the social and physical environment can be enhanced to facilitate communication.

A number of researchers (e.g., Cirrin & Rowland, 1985; Musselwhite & St. Louis, 1988) have suggested that individuals with severe disability, like their typical infant peers, go through a developmental phase during which time the content of their communication develops as their social and cognitive awareness increases. On the strength of this Cirrin and Rowland (1985) suggested taking people through these developmental stages by:

...engineering an environment that fosters communication in individuals who normally demonstrate little or no communicative behaviour. (Cirrin & Rowland, 1985, p. 61)

Although misguided in its assumptions that communication cannot develop in individuals with severe disabilities unless engineered by others, and in its failure to recognise individuals with severe disabilities as individual, social and reciprocating (Bogdan & Taylor, 1992), this statement does point to the critical role of the partner in any communication. Without an analysis of the effect of the behaviours of potential partners on the communication of an individual with a severe disability, it would be difficult to fully understand how the limitations of an individual's environment will affect her or his own communication behaviour.

**Communication Assessment: Implications for this Study**

If people with severe disabilities are frequently ignored and if their communications are seen to be motivated by a narrow range of intents, it is hardly surprising that their behaviour will be perceived to be limited in both its form and function. If the focus of observations is the individuals themselves and does not include their communication partners, then the potential for communication to be developed within complex patterns of relationship and interaction is ignored. As researchers, by focusing our assessments on the individual we make our evaluations of those skills on the basis of their ability to exert some
control over their lives. We do this however, without acknowledging the support or otherwise which the social and physical environment provides in establishing, maintaining and encouraging communication.

At issue here is whether it is possible or even necessary to accurately identify the function of a specific behaviour on the basis of the setting events and consequences of that behaviour. It has been argued that analysing the function of a behaviour in this way is at best haphazard, and at worst based on an acceptance that people with severe disabilities have little or no understanding of the potential effect of their own behaviours and that they will only communicate in limited ways for a limited number of purposes.

In the absence of a theory of communication intervention, it would seem reasonable to assume that people with severe disabilities will have the same range of communication needs as any other individual and that these needs will be present in any number of contexts. The challenge for any communication intervention is to provide opportunities for those communication needs to be addressed. This being the case, the analysis of the communicative intent of an individual's behaviour must emerge from an understanding of the difficulties an individual experiences in trying to communicate, the opportunities available for them to communicate and the development of shared routines from which behaviours can be accorded meaning. To this end, the primary role of assessment is to identify communicative acts when they occur in order that communication partners can be alerted to the fact that an opportunity for interaction exists. Just as "a learner need not be engaging in intentional behaviour before he or she begins to communicate"; (Reichle & Sigafoos, 1991, p. 77), a listener does not need to know the content of a message to respond to the fact that one has been delivered. Essential to the process however, is a thorough understanding of the skills and limitations that individuals with severe disabilities demonstrate within the context of their daily lives (Lucas, Weiss, & Hall, 1993). A central component of this understanding is an analysis of the behaviour of communication partners and the extent to which they act as facilitators or blocks to communication occurring.
The challenge for any communication intervention lies in the ability of communication partners to recognise and respond to interactive behaviour, to determine meaning as a result of their previous and current interactions, and to facilitate multiple opportunities in which communication can take place. Communicators must learn to integrate strategies that can easily convey meaning into their vocabulary. To achieve this, partners must be receptive to the behaviours people use that could convey information and communicators need to have available to them, a range of strategies that match their skills and limitations. In addition, those strategies that are available must be capable of conveying the information about which any individual would wish to communicate. Assessment must provide a basis from which these developments can occur.

**Communication Intervention and People with Severe Disabilities**

People with severe disabilities, despite increasing inclusion in the community, are poor, overly regimented and their lives are usually lacking in privacy and autonomy. They have to put up with their behaviour being subject to public scrutiny, they have few opportunities to develop trusting relationships and they are socially isolated (Bambara & Ager, 1992; Chappell, 1994; Edgar & Polloway, 1994).

Essential to the development of language/communication is the development of social-communicative strategies that emphasise the reciprocal nature of interaction and emphasise the communicator's role as an active communication partner in a dyad (Hwang & Hughes, 1995; Roberts, Burchinal, & Bailey, 1994). In many instances however, the opinions of people with severe disabilities are considered irrelevant (Kishi, Teelucksingh, Zollers, Park-Lee, & Meyer, 1988). Few opportunities therefore exist for people with severe disabilities to interact with others or to make choices (Stancliffe, 1991; Stancliffe & Abery, 1997). Where these options are available the choices available to people are often determined by others who interpret lack of preference, inability to suggest an alternative, or compliance, as active choice (Kishi et al., 1988) thus confirming for people with disabilities, their dependence on others (Zetlin & Turner, 1988). Further, it would
seem that any communication interactions between disabled and non-disabled partners are likely to be few, even if easily recognisable strategies exist. As noted by Bryen and McGinley, (1991, p. 210):

Do staff model/use signs when interacting with the residents?...staff use sign less than an average of two times per 30 minutes observation. When staff do model sign (albeit infrequently), they do so when teaching a sign to residents (2.4%), when socially interacting with residents (2.9%) and when interacting with someone else in the presence of the targeted residents (0.6%). When staff interact with the target residents, they failed to use sign 18% of the time. For the largest percentage of time staff were observed, there was no interaction at all (75.9%)!

How can communication, an intensely social experience, flourish in such settings? Clearly, as Rowland and Schweigert (1993) have shown, in order to be useful to an individual, communication must be functional, that is, influence others' behaviour and it must create opportunities that are appropriate and natural in a given social situation. These authors defined three major characteristics of functional communication; 1) it is communication that occurs in every day, real life or natural settings; 2) it results in real consequences; and 3) it includes, but is not limited to, spontaneous communication.

Traditionally, language skills were assumed to accrue in something of a stage like fashion, without explicit training and as a result of the development of the individual (Musselwhite & St. Louis, 1988). This developmental structure consisted of the identification, rather than learning, of relatively fixed sets of language rules during early development (Jackson, 1993). In contrast behavioural theorists assumed that people who, for one reason or another, did not acquire verbal language could be taught language and/or communication skills using behavioural principles (eg. Foxx, Kyle, Faw, & Bittle, 1988). Jackson, (1993, p. 144) pointed out that:

The operant paradigm emphasises that communication skills result from specific learning experiences. Discrete communicative responses can be taught via modelling, prompting, and the systematic manipulation of contextual variables and sources of motivation. This paradigm suggests that phenomena that are (or appear to be) rule governed can be linked to learning processes associated with generalisation.

A major assumption of the developmental model of language acquisition and the behavioural model of teaching, is that the structural elements of
language will develop independently of the context within which it occurs. Consequently, and with respect to communication, specialised teaching practices have been developed which were expected to develop communication skills in learners with severe disabilities. However, it can be argued that the failure of these models to consider context as a factor in communication processing has significantly misrepresented the competence of communicators (Jackson, 1993) and the degree to which those variables that create communication opportunities individually affect the process (Warren & Yoder, 1994). In addition, failure to consider the development of communication in its broad context has potentially prohibited us from seeing how the provision of communication supports can provide a catalyst for many of the social and adaptive behaviour changes that seem to occur concurrent with the adoption by individuals of new augmentative strategies (Abrahamsen, Romski, & Sevcik, 1989).

Although an analysis of the context is now seen as an essential element of the assessment process, its importance is recognised only to the extent to which it can assist in an understanding of the intent of that behaviour being demonstrated. The potential for natural environments to act as catalysts in the development of idiosyncratic communication skills in individuals with severe disabilities has yet to be recognised in the literature. Ironically, the manipulation of opportunities for communication to occur in "natural" contexts has received attention in recent years (Rowland & Schweigert, 1993). It would seem that there is an assumption that without the intervention of non-disabled people, communication does not and cannot occur:

This assessment protocol suggests strategies for engineering an environment that fosters communication in individuals who normally demonstrate little or no communicative behaviour. Within an institutional setting heavy structuring of the social context is necessary to evoke communicative behaviour from such individuals. (Cirrin & Rowland, 1985, p. 61)

As well as being central to the determination of intent, the context in which communication occurs has been recognised as being important to the selection of an augmentative strategy (Reichle & Sigafoos, 1991; Soto, Belfiore, Schlosser, & Haynes, 1993). To this end, environmental demands, contextual characteristics and partner competence (Soto et al.,
1993) appear to be critical aspects of the environmental context in which communication occurs, along with the analysis of the individual's communication needs. In reality, however, it would seem that the selection of augmentative strategies is often not based on any such analysis (Bryen & McGinley, 1991; Hamre-Nietupski, Nietupski, & Rathe, 1986). Issues such as the interventionist's familiarity with one particular system, the frequency with which a system is currently used in the same environments and an administrative preference for one particular system seem to drive selection of a particular strategy over another more frequently than do the demands of the environment or an individual's needs (Hamre-Nietupski et al., 1986).

Other researchers have noted that the need to analyse the context in which a strategy could be used could constitute something of a "pseudo issue" (Reichle & Karlan, 1985, p. 146) in that people with severe disabilities, as with anybody, may benefit from the use of a number of different systems (Warren & Yoder, 1994). These authors recommend (p. 254) that:

The real work for language interventionists and other educators is ... to match interventions with the characteristics of individual learning challenges ... and individual learning styles and levels (and) to combine approaches to create truly rich, stimulating, responsive and varied environments for children to learn in.

Although there has been some recognition of the importance of a stimulating social environment in the development of communication skills (Romski, Sevcik, & Wilkinson, 1994), there still seems to be significant reliance on the development of those aspects of communication that are seen to precede more general communication exchanges. Initial communicative exchanges with learners with communication difficulties often involve the development of requesting behaviours (Reichle & Sigafos, 1991; Tirapelle & Cipani, 1992). The rationale for teaching such a skill is that requesting behaviour provides a learner with a means of accessing and obtaining an object or activity; it allows the learner some control, provides a basis on which further intervention can be based, and could replace existing "attention or object-motivated excess behaviour" (Reichle & Sigafos, 1991, p. 89).
The strategies used to teach behaviours described as requesting have included the missing item format (Tirapelle & Cipani, 1992), backward chaining, (Reichle & Sigafoos, 1991), behaviour chain interruption (Goetz, Gee, & Sailor, 1985) and time delay and stimulus fading procedures (Sigafoos, Reichle, Doss, Hall, & Petit, 1990). While these strategies have proved to be very successful in clinical settings for teaching the behaviours described, we know well the difficulties in generalising these skills to other settings (Halle, 1987; Sommer, Whitman, & Keogh, 1988).

Communication occurs in the natural environment with numbers of communication partners, utilising numbers of cues (e.g., questions, requests, comments, declarations) and strategies. However, much communication intervention occurs in predominantly one-to-one settings in which there is a great deal of questioning and little emphasis on functional communication (Mackay & Watson, 1989; Schwartz, Carta, & Grant, 1996). As already discussed, the reality for people with communication difficulties is that their life experiences are different from their non-disabled peers: fewer demands are made of them; less time is spent in communication; they are not given a great deal of feedback; and most importantly, people without disabilities generally do not see the potential for communication with people with severe disabilities to be successful (Mackay & Watson, 1989).

**Communication in Natural Contexts**

For some time there has been a recognition that introducing "naturalistic" (Peck, 1985) augmentative communication strategies into a person's day that will complement their idiosyncratic strategies (Romski et al., 1994) can produce significant changes in communication between people with and without communication difficulties. However, what is central to the development of communication under these conditions is the participation of those others in the environment in communication exchanges. Despite this, few studies have considered the role of the communication partner in the generalisation of communication strategies. Hunt, Alwell and Goetz's (1991) study is one of the few to demonstrate the link between training communication partners and successful conversation occurring:
At the end of the training phase, when Christie, Cleo and Judd were independently participating in balanced, sustained conversations with a large number of peers at school, there continued to be breakdowns in conversation at home and with naive schoolmates. This outcome had been predicted. The study had been designed to demonstrate with experimental controls that successful conversation would occur at home or school immediately following a brief training provided to friends and family members and other caregivers.

(Hunt, Alwell, & Goetz, 1991, p. 317)

The willingness of others to engage in the development of communication competence has also been considered:

In those cases where our success was limited, lack of improvement seemed to be attributable to the failure of staff to implement our recommendations.

(Durand & Kishi, 1987, p. 9)

Although those working with people with severe disabilities have the skills with which to develop plans and programmes to support the people with whom they work, they rarely do (Gersten, Morvant, & Brengelman, 1995). While the contextual factors that influence an individual's work are important, what is critical are the beliefs of those providing support about the people with whom they work. If the views of people with disabilities are considered irrelevant (Kishi et al., 1988), there is little likelihood of real interaction taking place. If people with severe disabilities are not considered to communicate until they are taught to (Baumgart et al., 1990; Cirrin & Rowland, 1985), nobody will look to them to make decisions and choices. If we accept that all behaviour communicates and that all people communicate to some degree (Baumgart et al., 1990), then intervention must fundamentally affect the ways in which others respond to the communication of individuals with severe disabilities.

**Communication Intervention: Implications for this Study**

It is apparent that the literature on the development of communication in people with severe disabilities includes a number of contradictions. There is a recognition that all behaviour can be communicative and all people will communicate to some degree. A number of studies that confirm this point have been discussed. Yet these same studies state
that people with severe disabilities will not be able to communicate unless intervention takes place.

There is a recognition that communication is a complex social phenomenon and that it is simply not possible to identify those variables that independently support the development of communication skills. However, interventionists have spent a great deal of time and energy on teaching people to perform specific acts in highly structured and contrived settings. Only in recent years has there been a growing awareness that these skills seldom generalise into social situations!

As communication is a complex social experience, the role of the communication partner in any interaction is critical to the success of any intervention. Our intervention efforts, however, have rested on teaching those individuals we identify as having communication deficits to perform particular skills or aspects of the communication process. Few studies have considered how the partner fundamentally affects the communication process.

Communication is about power; it is about having some effect on the things that happen in an individual's life. If an individual's opinion is considered irrelevant, how can that person have any effect on the things that happen to him or her? Clearly, if our intentions as support workers or as friends or indeed as members of the wider community are to support people whose communication strategies prove difficult for us to understand, and to help them take control of their own lives to the greatest extent possible, our interventions must begin to reflect that intent. To this end, our efforts must be geared towards teaching others about the communication behaviours that people use and that are revealed as a result of our assessments. Our understanding of the capabilities and limitations that individuals experience must drive the selection of strategies that can extend their current repertoires. Any strategy or combination of strategies that we help the person to develop, must create opportunities for him/her to convey all of the needs that any individual would have for communication as a social being.
CHAPTER THREE

Relationships as a Context for Learning about Communication

People learn about communication in the context of their interactions and relationships with others. People with severe disabilities often have few of these opportunities. The literature has assumed that they learn best as a result of specialised interventions to teach the mechanics of communication and social skills which they can then apply in natural contexts.

Introduction

While there has been considerable research on the communication gains to be made by people without disabilities as a result of social interaction, relatively little is known about the social supports available to people with severe disability, that could support communication development (Krauss, Seltzer, & Goodman, 1992a). Nevertheless, there is an assumption that the social and communication skills of people with severe disabilities will lag behind those of their non-disabled peers due to the nature of their disability rather than as a result of the social circumstances of their lives (Siperstein & Leffert, 1997).

There is widespread acceptance that the experience of friendships and relationships is critical to an individual's personal and social development (Grenot-Scheyer, 1994; Guralnick, 1997; Rogoff, 1990). However, the promotion of social behaviour in people with disabilities has largely occurred in controlled settings using specific intervention techniques such as instruction in analogue settings, prompts to emit targeted behaviours, positive reinforcement for the use of specific behaviours, and combinations of these procedures (McConnell, Sisson, Cort, & Strain, 1991). In addition, intervention with people with the most severe disabilities, who have even less access to social groups (Hayden, Lakin, Hill, Bruininks, & Copher, 1992), has tended to focus more on the provision of ways in which individuals can make choices and decisions (Realon, Favell, & Lowerre, 1990) than on their interactions with peers. Similarly, research (eg. Hundert & Houghton, 1992) has often focused only on the behaviours of individuals with disabilities and not on that of their potential social and communication partners.
Although powerful treatment effects have resulted in the initial acquisition of isolated social skills under the training conditions described, the long term effects on an individual's behaviour or skill level in natural settings are considerably more equivocal (Hundert & Houghton, 1992; Lee & Odom, 1996; McConnell et al., 1991). The effective development of social skills and communication require those individuals involved in social interactions to have some empathy with their partners and to feel positive towards those with whom they interact, and their interactions need to be reciprocal in nature (Rogoff, 1990). Those studies that purport to train social skills in contrived settings rely on the development of the mechanics of social interaction such as sharing and asking questions (McConnell et al., 1991), and appropriate responding (Oetting & Rice, 1991). Significantly, these more overt social behaviours can be understood using traditional treatment models but others cannot. It is impossible for instance to identify and then to replicate those variables which contribute to the feeling of wellbeing that can result from interaction with another (McConnell et al., 1991). Feelings of empathy, of support (Newton, Olson, & Horner, 1995), or of simple pleasure in the company of others can only occur in natural contexts where those engaging in the interaction have control over what happens and when.

This chapter explores the literature on social interaction and discusses the potential for communication to be fostered within social relationships between people with and without severe disabilities. At issue is whether it is possible to develop social interaction and communication skills using a traditional intervention model or whether these skills must be fostered in natural settings and contexts with naturally occurring reinforcers.
Severe Disability: Traditional Treatments and Communication

There appears to be a general acceptance that social interaction skills generally and communication skills specifically can be improved with training in people with severe disabilities (Oetting & Rice, 1991) and that they are best taught in training contexts (Miller, Clarke, Malcarne, Lobato, Fitzgerald, & Brand, 1991; Oetting & Rice, 1991). Initial training generally seems to focus on the exercising of preferences and the making of choices (Shevin & Klein, 1984), leading to self-determination (Wehmeyer & Metzler, 1995), and ultimately, to engagement with others in socially appropriate and acceptable ways (Siperstein & Leffert, 1997). It is increasingly recognised however, that individuals with disabilities often fail to generalise newly learned social skills to everyday environments (Hundert & Houghton, 1992) because of the dependency of pragmatic skills on the context in which interaction occurs (Oetting & Rice, 1991). This is not surprising given that in training contexts, regardless of the number of people present, interaction is usually dyadic, involves a teacher and a learner and is relatively tightly structured. In contrast Oetting and Rice, (1991, p. 435) noted that:

unplanned conversation entails frequent initiation and termination of topics, presuppositions, and management of conversational turns and breakdowns. Unplanned conversations can involve any number of people and can vary in the number of dyadic and group conversations.

In addition, it could be argued that failure to generalise these specific social skills and to influence communication development arises from the notion that it is possible to compartmentalise and teach separately those aspects of social behaviour that will lead to communication. This compartmentalisation of skills has resulted in some confusion as to whether social interaction will actually affect communication:

...the reason that many studies have not found a relationship between social interaction and language is that they have reified both the social and the linguistic as separate given categories rather than as processes in formation. They suggest that an adequate examination of the question requires scholars to
1 Look at social interaction and language as constitutive processes rather than as rules operating on already given categories
2 Consider language as a means to structure reality through social or communicative functions (stressing that linguistic activities are, right from the start, intersubjective processes)
In discussing the potential gains in communication that individuals with the most severe disabilities could make, Realon et al., (1990) studied the effect which the provision of choices about leisure activities made on the engagement in those activities of the study's participants. They found that choice about whether to be involved or not resulted in greater engagement in activities. It could be argued that the choice about the activity and whether to engage in it or not provokes an interest in the activity itself. In the same vein, opportunities and choices about when and how to interact with others also provoke an interest in engagement. Clearly, given such an opportunity, communication skills are more likely to develop.

Oetting and Rice, (1991) reviewed 14 studies to determine the differences in social skills that were developed in training and in natural contexts. The conclusion from this review was that training contexts could not possibly replicate natural contexts. Within social exchange people rely on the cues provided by others to sustain their interactions. Training contexts cannot replicate the complexity of behaviours and cues found in typical social settings. Oetting and Rice (1991) tested this hypothesis by assessing the ability of people with intellectual disabilities to monitor the discussions taking place within social interactions. These researchers asked their study participants to review video footage of people engaging socially. Their results suggested that variations in the number of people present, the number of utterances per person and the degree of the appropriateness of a speaker's response affected the abilities of people with disabilities to monitor the discussions presented. They point out that while the many subskills feeding into pragmatic competence have been the topic of research, the interplay between comprehension, monitoring of self and others and verbal interaction skills continues to be unexplored. Despite the people in their study being observers only and that they had no previous experience of the people they viewed and that the topics of conversation were not necessarily of any interest to them, the finding of the study was that people with intellectual disabilities lacked the
competence to participate in complex conversational exchanges (Oetting & Rice, 1991).

McConnell et al., (1991) used a behavioural design (ABACAD) to observe a group of children during baseline (A), instructed on the use of social interaction skills (B), individually coached in natural contexts (C), and groups including the target children were coached (D). Few behaviours from training sessions were observed to generalise to natural contexts. Assessments of the results of each treatment phase were conducted using coded observational categories based on the skills taught in training sessions. The pro-social skills which these authors described concerned the interaction of children in play situations. Evidence of children initiating interactions for the purposes of play, sharing equipment, asking to join activities and organising play along with listening, asking questions and talking together were seen as key aspects of interaction. The coaching provided in natural contexts later in the study also failed to change the behaviour of target students outside of treatment phases.

Similarly, using an ABAB design, Lee and Odom (1996) found that outside of treatment phases, students were unlikely to share activities with their disabled peers.

The degree to which those aspects of social interaction already discussed affect the social integration and therefore communicative competence of individuals with disability remains contentious (Chadsey-Rusch, Linneman, & Rylance, 1997). It could be argued however, that while the skills discussed are central to the social interactions of children in play situations, so are common interests, empathy, and ultimately, friendships. While we focus on the mechanical aspects of social interaction from the perspective that it is the individual with the disability who has the deficit, we forget that relationships are the fundamental basis on which communication development occurs (Rogoff, 1990). Unless children and others see that there is something worthwhile to be gained from interactions with their peers beyond the demonstration of play skills, listening or asking questions, they will be unlikely to engage in interactions. It would seem therefore, that an understanding of the value and the purpose of relationships between
people must parallel any attempts to assist in the development of social interaction and communication skills in individuals experiencing those difficulties.

**Relationships as a Context for Communication**

There has been a move over the past few years to look at "lifestyle support" for people with disabilities (Newton, Horner, Ard, LeBaron, & Sappington, 1994, p. 393) rather than focusing specifically on health, safety and skills development. To this end, relationships and social interaction have come to be regarded as opportunities within which communication as a social behaviour (Reichle, 1997) can develop. Along with the creation of opportunities for individuals with disabilities to interact with others in natural contexts (Hamre-Nietupski, Shokoohi-Yekta, Hendrickson, & Nietupski, 1994), this move away from a focus on skill building in the individual has meant that individuals without disabilities have also been in a position to learn how to support their peers with disabilities. This support is characterised as:

information that led individuals to believe they (a) were cared for and loved, (b) valued and esteemed, and (c) belonged to a network of communication and mutual obligation... In an alternative conceptualisation, Cassel (1976) regarded social support as feedback, and he emphasised the importance of the overt behaviour, or "social transactions" that transpire between individuals. (Newton et al., 1994, p. 394)

While the provision of social support has not been a strong focus in the research, a consistent finding (Siperstein & Leffert, 1997) is that social behaviour influences social status. With respect to children with disabilities, those who are accepted in their peer group engage in higher frequencies of sociable behaviour while those who are rejected or do not have opportunities to engage with their peers, use anti-social behaviour to a greater degree (Farmer, Pearl, & Acker, 1996; Lee & Odom, 1996). It is suggested that access to an accepting peer group promotes the development of strategies that can be used to resolve social problems (Miller et al., 1991; Siperstein, 1992) as well as general social competence (Guralnick, 1997). If, in our haste to teach social skills, we ignore the role of the "other" in any social interaction, we ignore the effect that the behaviours of others have on shaping and reinforcing socially appropriate or inappropriate behaviours. Thus, if a partner has
a negative attitude towards individuals with disabilities, then they are likely to reflect that in their interactions, thereby promoting the potential for negative behaviours, in effect creating a self fulfilling prophecy:

...the anticipation of rejection might inadvertently produce it.  
(Miller et al., 1991, p. 456)

An integral facet of the development of social behaviour is the influence of social knowledge (Siperstein, 1992). Clearly, without the opportunity for social knowledge to grow, social behaviour cannot develop. Recent research (Parent, Twardzik, Kregel, and Metzler, 1992; Wenz-Gross and Siperstein, 1997; Yan, Mank, Sandow, Rhodes, and Olson, 1993) has found that while numbers of children and adults with disabilities had access to social circles that were similar in size to those of their non-disabled peers there were differences in the nature and quality of the interactions people enjoyed in those social circles. Wenz-Gross & Siperstein (1997) interviewed children with and without learning disabilities: Parent et al., (1992) used direct observation and a frequency analysis to assess the social interactions of workers with and without disabilities during work and break times; and Yan et al., (1993) completed a "clique" analysis of the social interactions between individuals with and without disabilities in an employment setting. They defined a clique as "a group of people who are more intensively involved in a given type of social interaction than other persons in the same setting" (Yan et al., 1993, p. 283). While all of these studies highlighted the point that individuals with disabilities saw themselves, and were seen by others, to have access to social networks as wide as their non-disabled peers, these relationships lacked the degree of social support and intimacy common to relationships among people without disabilities (Hayden et al., 1992; Parent et al., 1992; Yan et al., 1993; Wenz-Gross & Siperstein, 1997). A consequence of this situation was that while general interaction skills may develop, those that are central to the development of intimate relationships do not:

Children with learning problems often have difficulty in areas that could be expected to hinder both eliciting and giving support, as well as interpreting supportive interactions. For instance, some children with learning problems show deficits in conversational abilities; in evaluating facial
expressions, gestures, and body language; in learning the meaning of others' actions; in relating in non-stereotypical ways; and in social judgement (Wenz-Gross & Siperstein, 1997, p. 190)

A significant implication of these studies was the importance of the development of skills and capabilities that would assist workers with disabilities to become socially integrated into their workplaces. It is clear that the simple placement of people with disabilities into integrated settings will not of itself, promote social interactions between people with and without disabilities (Hayden et al., 1992; Hundert & Houghton, 1992). To this end, support to establish and maintain positive social interaction in the natural context of work or school is advocated (Parent et al., 1992). It is suggested that for any positive social interaction to develop amongst people with and without disabilities, a degree of reciprocity must emerge (Hundert & Houghton, 1992) from the relationships established. This was discussed by Grenot-Scheyer (1994) in her analysis of the differences in behaviour between the friends and acquaintances of children with severe disabilities:

Generally, when the typical children were with their acquaintances with severe disabilities they appeared more directive, delivered more reprimands (e.g. demonstrated the "right" way to comb doll's hair), were louder, and did not seem as engaged in the activity. When the typical children were with their friends with severe disabilities, they seemed happier, were able to follow the non-verbal communicative behaviours of their friends, used signing to communicate with a friend, and followed the initiations of their friends.

(Grenot-Scheyer, 1994, p. 260)

This discussion focuses on the potential for the communication skills of individuals with severe disabilities to be enhanced from within the context of social interactions. The previous chapter has suggested that the idiosyncratic communication strategies which individuals already use should form the basis of communication developments. To this end, those others who interact with individuals with severe disabilities need to be acquainted with these strategies so they can respond to communication initiations when they occur, and maintain and extend interactions once they have begun. To enable this to occur, potential communication partners need to be aware of the skills and limitations which people experience as a result of their disabilities, the particular likes and interests that they might have, as well as their preferred
methods of interaction. However, not all of the responsibility for communication rests on the shoulders of non-disabled participants in any interaction. Social interaction will only occur when people feel that they are valued by communication partners, when they feel that they have something to offer and when they feel that they get something back.

In a similar study (Newton et al., 1995), 14 people without disabilities discussed the nature of the friendships they had with individuals with intellectual disability. Frequent themes that arose were of empathy, reciprocity in their relationships, emotional support and some social support. Commonly however, support has tended to be somewhat asymmetrical in favour of the person with disability (Krauss et al., 1992a). Interviewees also talked about caring for each other, about the stability their relationships brought them and about the simple pleasure each person in the relationship got from the other (Newton et al., 1995). While a number of the people with disabilities discussed in this study did not use verbal language, all of the non-disabled participants felt that they had ways with which they easily interacted and communicated. Generally, the more severe an individual's disability, the smaller their social networks and frequency of contact with others (Hayden et al., 1992).

While it is entirely possible for people with and without disabilities to form equitable, supportive and positive relationships in which both partners can develop, relationships of this nature do not often occur. Using direct observation techniques, McEvoy, Shores, Wehby, Johnson, & Fox, (1990) investigated the effect of teachers organising the environment to promote interaction, giving their non-disabled students information about those students with disabilities who were going to join the class and then providing a model for and prompting social interaction between students. Their findings indicated a strong positive correlation between the teachers' efforts and the quantity and quality of social interaction that occurred in classrooms.

In a similar study, students without disabilities were frequently given information about the communication systems used by their disabled peers along with multiple opportunities in which to interact (Hunt,
Central to this study was the creation of opportunities in which students with and without disabilities could form friendships that were not mediated by teachers or others. The authors used a multi-component behavioural design focusing on the collection of data around the number of communicative initiations made by the disabled students and their peers, the number of reciprocal interactions that followed and the nature of that interaction. This information was supplemented by interviews with the non-disabled students in the study and their teachers.

Positive changes in the relationships between students with and without disabilities resulted from access to information and interpreting assistance for communication where necessary, a physical environment geared to the provision of multiple opportunities and the facilitation of friendships using "buddy" systems. As the study progressed, facilitation by adults, which had occurred only where requested, decreased. In addition, the number of interactions between the students increased, and the number of protests made by the target students with disabilities decreased. Of specific interest was a generalised increase in discussion between all of the students and a corresponding increase in the affection shown between participants. Interviews revealed that students considered themselves to be "friends with" target students.

The communication skills necessary for people to engage with others can only develop within the context of social interaction. In order for interactions to develop, the participants in those interactions need to have some empathy with their partner and to feel positive about their interactions. Although there are numbers of skills which can be taught to people to enhance the potential for interaction to occur, skills in listening, asking questions and responding to the initiations of others will not of themselves promote interaction occurring.

People with severe disabilities have generally been taught to use social skills in isolated contexts. They frequently lead socially isolated lives and they are often accused of being unable to generalise new learning beyond training. There is now an acceptance that people without disabilities grow and develop as a result of their interactions and relationships with others. There is clearly a need for people with severe
disabilities to have access to the same opportunities in order that they can learn about the skills necessary to interact with others and for others to be familiar with the skills and needs that they have. People with severe disabilities are restricted by their impairments. Without an awareness of those restrictions and the accommodations that people make because of them, communication partners will remain ignorant of the supports they can provide and the experience to be gained as a result of interactions and relationships with others.

**Implications for this Study**

It is clear that attempts to train people with severe disabilities in the development of social skills and communication generally are problematic. The arrangement of stimuli in contrived settings to understand and promote such developments has been based on the belief that individuals with severe disabilities need special training with which to learn those behaviours that will make them more acceptable to their peers. The presumption on which this belief is based is that social interaction and communication are skills that can be taught separately. Generally speaking, while individuals with severe disabilities have clearly made great strides in the acquisition of those skills that are perceived as components of social interaction and communication, they have rarely integrated them into the course of their daily lives.

Where individuals without disabilities are informed about the individual skills of and challenges faced by their peers with severe disabilities, where multiple opportunities are facilitated during which individuals with and without disabilities can interact with each other, and when these interactions are modelled, significant social and communicative gains have resulted. Central to these gains have been the relationships that have existed or have developed between those with and without disabilities. Within the context of these relationships, reciprocity, empathy and friendship are critical elements that foster and encourage interaction. Without these central elements, interactions tend to focus on skills such as listening to others, sharing games and equipment or using question routines, which while important in themselves, are meaningless without the context that relationships provide.
With respect to communication between people with and without severe disabilities, it is essential that there is a focus on the development of relationships between potential communication partners and on the facilitation of multiple opportunities in which communication can occur. To this end, people need information, opportunities and models from whom they can learn in their own ways over time.
CHAPTER FOUR

Adults with severe intellectual disabilities: attitudes, self-determination, and opportunities for communication

Adults with severe disabilities lead socially isolated and overly regimented lives. Even if they have the skills to interact "appropriately" and socially in community settings, few actually get that opportunity. Those who work with them perceive that there is little to be gained by such exchanges, so few opportunities are made available.

Introduction

The last two decades have seen significant shifts in the provision of supports and services to people with disabilities. However, ideologies such as inclusion have been more about people's physical integration (Polloway, Smith, Patton, & Smith, 1996) than the realisation of those aspects of living in typical communities which create and reinforce our membership in society. Despite the rhetoric of inclusion, people with severe disabilities continue to rely on segregated services which are designed specifically for them. Apart from family members and their severely disabled peers, such individuals tend to have only paid staff in their lives. This isolation inevitably results in a lack of opportunity for people to develop a measure of self-awareness and self-confidence, the chance to indicate choices, make decisions and ultimately, to be self-determining or as Wehmeyer and Metzler (1995, p. 111) noted:

...to act as the primary causal agent in one's life and to make choices regarding one's quality of life free from undue external influence or interference.

Lack of access to community settings must inevitably lead to restrictions on the number and scope of developmental opportunities available to people with severe disabilities. Wilson (1997, p. 13) discussed that:
Our growth is determined by the size of our world. It's not so much the dimensions of that world, but the mental, emotional, spiritual, and physical opportunities we are exposed to.

The difficulties experienced by people with disabilities in becoming self-determining seem to be based on the stereotype that implies that they cannot or should not practise self-determination (Polloway et al., 1996). While this assumption continues to cause conflict amongst researchers and practitioners (Biersdorff, 1996), research into the availability and provision of opportunities for people with severe disabilities to become self-determining has received little attention in the literature (Reichle, York, & Eynon, 1989). As a result of this, and despite the fact that the philosophy of empowerment is widely acknowledged (Henry, Keys, Balcazar, & Jopp, 1996), and that methods exist for assessing the individual preferences of people with severe communication difficulties (Stancliffe & Abery, 1997), few opportunities are available to people with severe disabilities to exercise preferences and to make choices.

This chapter reviews literature on the opportunities which adults with severe disabilities have to become self-determining and to make choices in the same ways and for the same reasons as would any individual. Of particular concern is the extent to which those who support and care for people with severe disabilities are willing to "allow" individuals to use and to develop their skills. Clearly, whether individuals has access to a number of communication strategies or not, they will not be able to gain affirmation for the decisions and choices they make for themselves unless those others who interact with them are prepared to respect and act on the decisions which they make. At issue therefore, is the extent to which the context in which communication occurs is critical to the success of that communication.
**Attitudes**

The term attitude is used to refer to those beliefs that are taken for granted as truths that affect and influence practice (Malouf & Schiller, 1995). Although difficult to define and to study, there is however, general agreement that attitudes and beliefs are more influential than knowledge in determining the behaviour of workers towards people with disabilities (Malouf & Schiller, 1995).

As has been discussed in previous chapters, even though there is a substantial body of support for the notion that everybody communicates in some way (Baumgart et al., 1990, p. 40), these authors continue to be an accept that (p. 3):

> choices are often made for nonverbal people because they lack the means to state their choice.

It would also seem that choices for people with disabilities are made by others because of the negative beliefs held by support people towards those with severe disabilities (Henry et al., 1996; Rees, Spreen, & Harnadek, 1991). Prevailing attitudes towards such people suggest that individuals with severe disability remain in a "childlike" state (Heyman & Huckle, 1993) and that they do not actually have the skills to make choices at all (Parsons, McCarn, & Reid, 1993; Siperstein, Reed, Wolraich, & O'Keefe, 1990), that they will make the "wrong" choice (Brown & Gothelf, 1996) unless taught to do otherwise (Danforth, 1997). As a result, those decisions that are considered to be of some importance are made by staff rather than the individuals themselves (Wehmeyer & Metzler, 1995), the nature of the actual decision dictating the level of support or supervision provided, more than the needs of the individual themselves (Legault, 1992).

Choices, where they are available to people with severe disabilities are often of a "forced" nature, that is, all or nothing (Wehmeyer & Metzler, 1995) and are substantially similar to the restrictions placed on children in the early stages of their development. Central to this behaviour would seem to be the conflict that exists in many people's minds between the chronological age of a person with a severe disability and
their perceived "mental age" (eg. Calhoun & Calhoun, 1993). In addition, there is often an acceptance that people with severe disabilities will, because of their intellectual "subnormality", be more inclined to behave in unpredictable or "abnormal" ways (Wagner, 1991). As a consequence of these beliefs, few opportunities seem to be made available to people with severe disabilities to exercise any choices (Kishi et al., 1988; Malouf & Schiller, 1995; Parsons et al., 1993; Reichle et al., 1989; Stancliffe & Abery, 1997). It could be argued therefore, that a lack of choice making skills could have a great deal more to do with lack of opportunity than lack of ability or means with which to communicate choices:

Unfortunately, learners who are considered the most passive frequently fail to make selections in (an)...activity. One plausible explanation for the passive participation is a lack of previous opportunities to engage in preference selection behaviours. Frequently, even the most well intentioned caregivers do not expect learners with the most severe disabilities to indicate preferences and therefore do not systematically arrange for, prompt, or reinforce emerging preference indicating behaviours. Over time this can lead to a phenomenon referred to as learned helplessness. (Reichle et al., 1989, p. 193)

More recently there has been some recognition that a lack of opportunity for communication is related to the attitudes of those people who have regular contact with people with severe disabilities (Bennett, Lefcourt, Haft, Nachman, & Stern, 1994). Edgar and Polloway (1994) make a similar point.

We believe that we, as professional special educators and the gatekeepers for society(,) in relation to disenfranchised students need to create more options for our students. We need to shed the low expectations held by society (or sometimes ourselves) for these students and dream of programmes that will result in high levels of skills and values for them. (Edgar & Polloway, 1994, p. 450)

In order to create the potential for change, it is essential to understand the beliefs and attitudes that drive the actions of those people supporting individuals with severe disabilities. The literature has noted that staff with more professional backgrounds tended to have more liberal attitudes towards people with disabilities (Murray & Minnes, 1994) and that those who are more comfortable with people with disabilities identify significantly higher social and vocational
competence in those people than do those who are not comfortable (Shafer, Rice, Metzler, & Haring, 1989). For people with severe disabilities then, there are clear benefits in having well trained and positive support from those who work for them.

Interaction between disabled and non-disabled people has a positive effect on both parties (Rowland & Schweigert, 1993). For people with significant communication difficulties, the benefits of interacting with those without communication impairments are even more profound (Beukelman & Mirenda, 1992). Access to the typical community, in both a physical and a social sense is therefore essential. If however, the views of those who work with people with severe disabilities are such that they believe that severe disability implies a lack of understanding or a requirement for a great deal of support (Rees et al., 1991), the activities that staff prepare for their clients will likely reflect that belief. There is evidence to suggest that staff involve their clients in community activities more to keep them active, than to really enhance their integration into the community (Lord & Pedlar, 1991; Markova et al., 1992). Clearly, the perceptions which support people have of those with whom they work will significantly affect the quantity and quality of any interactions and the benefits which accrue for participants.

**Self-Determination and Adults with Severe Disabilities**

Research into the opportunity for individuals with disabilities to make choices about their lives has shown that where staff levels are such that people are left unsupervised for long periods of time, choice and decision making are frequently left to the individual themselves (Stancliffe, 1991). However, people with severe disabilities who use residential or vocational services are not usually left in unsupervised situations; they are invariably subject to a relatively high degree of staff support as a result of the level of need they are perceived to have (Siperstein et al., 1990). Ironically, people who have severe disabilities have been shown to have greater comprehension of the world than they can sometimes display, they feel the same need to become independent as do their typical peers and they feel a sense of isolation from the community at large (LaConto & Dodder, 1997; Wright & Ashman, 1991). When given the opportunity, they have also shown high levels of
motivation to gain information and skills, to self-determine (Bambara & Ager, 1992) and to make decisions wisely (Nozaki & Mochizuki, 1995). The reality for these people however, is that their lives are often prescribed for them, they have few relationships (Benz & McAllister, 1990; Kennedy, Horner, & Newton, 1989) and they lack privacy and autonomy (Chappell, 1994).

People with severe disabilities who live in community settings have been shown to have greater access to opportunities for choice making than their peers in institutional settings (Stancliffe & Abery, 1997) yet by comparison with their typical peers, the opportunities to exercise choices are very small. Most often, choice making is also related primarily to relatively straightforward options such as food choices and clothing choices (eg. Lovett & Haring, 1989; Parsons et al., 1993). Major life choices are almost never offered to people with severe disabilities (Stancliffe & Abery, 1997), yet issues such as where to live, access to others and work are identified by people with severe disabilities as being important to them (Ashman, Suttie, & Bramley, 1995; LaConto & Dodder, 1997).

While self help and communication skills grow and develop amongst people with severe disabilities who move from institutional to community settings, these changes are accompanied by very high rates of instruction giving and little actual interaction (Fine, Tangeman, & Woodard, 1990; Kuder & Bryen, 1991). Clearly, the constant issuing of instructions on how to act, what to do and when to do it, as well as few opportunities in which to develop and use social interaction skills can only result in increased dependence. Self-determination is an element essential to the development of independent skill completion. Yet, research studies which are aimed at assisting people to become members of their local communities in a physical sense rarely focus on those skills central to the development of self-determination such as the consideration of life choices or the development of relationships (Aveno, 1987; Lovett & Haring, 1989). Remarkably, lack of access to peers, while recognised in the literature (Lovett & Haring, 1989), is generally regarded as secondary to the need for the development of practical day-to-day living skills such as meal preparation or personal presentation.
Intervention of a social interactive nature, where it has occurred, has often focused on the acquisition of skills, particularly social skills which are required to enable individuals to participate in community living or work options (Watson, 1996). Social competence or the successful use of any number of social skills in natural settings encompasses, among other things, decision making skills (Gumpel, 1994). Typical interventions have often focused on the teaching of those discrete social behaviours that an individual might use in conjunction with other behaviours, in any social setting. However, the use of such skills in natural settings has been limited, as a result of the lack of access to community settings of people with severe disabilities (Chappell, 1994). People receiving social skills training therefore, have few opportunities to demonstrate their social competence. Failure to do so inevitably results, not in a recognition that the intervention may be at fault, but in an assumption that the individual receiving the training has not acquired the appropriate skills and should therefore be protected from further failure. Inevitably, lives become more restricted and opportunities for further growth are curbed as a result (Heyman & Huckle, 1995).

Of significance to the study of self-determination in people with severe disabilities is that most research and provision for supports for individuals have largely been based on service related aims rather than client related aims (Greasley, 1995). The net effect of such an orientation is that individuals are shaped to "fit" existing service options or to develop skills that would potentially reduce an individual's reliance on services (eg. Aveno, 1987; Siperstein et al., 1990), rather than to have the opportunity to identify and design their own services to best meet their needs. There is little research that looks at the support which individuals actually need to live in community settings or at the effects that environmental stimulation has on the decision-making process (Clark, Reed, & Sturmey, 1991; Nozaki & Mochizuki, 1995; Richards & Sternberg, 1992). As noted by Racino (1995, p. 309):

This study lends support to the critical importance of choice and control in achieving "community integration" and for the need to transform roles of staff to better promote choice and empowerment. The opportunity for people with developmental disabilities to make choices or decisions in conflict with those of service providers and to have a chance to retain control of choices after having made a human mistake emerged as a powerful theme for further research.
The availability of choices to people with severe disabilities has been seen as involving an element of risk. These people are often perceived as being in need of support, assistance and training. If people are free to make choices about critical issues in their lives, there is the concern that they may not make the "right" choice. However, people with severe disabilities, as already noted, have often made decisions that are seemingly at odds with the behaviour expected of them:

Allowing persons with severe disabilities to reject or to choose among available options might be accompanied by a certain element of risk: refusal to accept personal/social responsibility or to participate in habilitative programming or choosing to engage in activities that may produce disapproval from others. Yet this defines personal autonomy. Therefore we should allow and honour their choice making unless their lives are in peril. Providing choice making opportunities might produce solutions to on-going problems. This participant was restricted in the amount of tea she was permitted to drink, because she had diabetes and would drink indefinitely. However, when she was allowed to choose and tea was one of her options, she did not select it frequently.

(Nozaki & Mochizuki, 1995, p. 200)

It would seem therefore, that the behaviours which people with severe disabilities use and which are sometimes described by others as difficult, could actually be efforts to take some control of the worlds in which they live (Donnellan et al., 1984). These same behaviours however, are seen by staff and others as signs of the pathology of severe disability (Skrtic, 1986; Wagner, 1991) and therefore reason not to provide opportunities for choice-making. Despite there being a significant body of knowledge supporting the notion that maladaptive behaviour can serve a communication function (eg. Carr et al., 1994; Donnellan et al., 1984)) direct-care staff do not seem to be familiar with the communication potential of people's behaviours (Henry et al., 1996).

Interaction, Environment and Communication

Studies looking at the effects of the environment on language development in children with disabilities note the high correlation between the development of language skills and the opportunities available to rehearse language or to engage in communicative acts (Hile & Walbran, 1991; Houghton et al., 1987; Ostrosky & Kaiser, 1991; Peck, 1985) Ostrosky and Kaiser (1991, p. 6) discussed that:
Both social and physical aspects of the environment set the occasion for communication. The physical environment includes the selection and arrangement of materials, the arrangement of the seating to encourage engagement and scheduling of activities to enhance participation and appropriate behaviour. The social environment includes the presence of responsive (listeners) and (peers) and the verbal and non-verbal social interactions that occur among the people in the environment.

Since verbal language is a form of communication, we must assume that if the environment can encourage people in the acquisition of language, the same must be true with respect to communication generally.

Best practice in the field of language support and intervention for people with disabilities often advocates a "natural environment" or "milieu approach" (Rowland & Schweigert, 1993). This approach emphasises the use of natural communication routines within the context of daily activities. Without a range of experiences in which people have the chance to make choices, to do specific things and to engage with others over time and in specific contexts (Kennedy, Horner, Newton, & Kanda, 1990), few chances for communication would exist.

In reality, daily activities for people with severe disabilities vary greatly in their ability to stimulate communication (Rowland & Schweigert, 1993). Studies of the social performance of individuals with intellectual disability and autism suggest that low levels of language production may be associated with the relative absence of certain types of interaction opportunities (Halle, Alpert, & Anderson, 1984; Haring, Neetz, Lovinger, Peck, & Semmel, 1987; Peck, 1985), and that those opportunities which are available may be highly structured or controlling. As a consequence of this, numbers of the activities in which people with severe disabilities engage, may mitigate against the development of communication skills. Peck (1985, p. 183) noted that:

Orlansky described typical classroom environments for students with severe handicaps and concluded that these environments were "over programmed", provided too few opportunities for interaction, and were too controlling of students. Guess and Siegel-Causey (1985) identified many of the same problems. In addition, these authors noted the critical instructional emphasis in these classrooms of strong adult stimulus and reinforcement control over student behaviour.
Also of concern are the strategies often utilised to engage individuals in activities. Procedures such as incidental teaching, mand-model, time delay and interrupted behaviour chaining (Haring et al., 1987) rely on the presence of another more able communicator to prompt, model and assist in the generalisation of language skills. What these procedures inevitably focus on however, are requesting behaviours alone. While these skills are important, making requests constitutes only one part of our communication needs; the bulk of people's time is spent on social interaction and information sharing (Chadsey-Rusch & Gonzalez, 1988). In addition to the provision of opportunities for people with communication difficulties to make requests, environments must be geared to support general decision-making and the expression of preferences and social interaction. Sands and Kozleski (1994, p. 6) note of the typical population:

Although such social demographics as socio-economic status, race, ethnicity, gender, marital status, age and education have all been shown to impact independence, the ability to form and maintain relationships and the accessibility to others who are willing to involve themselves in relationships appear more crucial.

For the effective development of communication skills in people with communication difficulties, the environment must provide opportunities for them to engage in requesting behaviours, to interact on a social level with others, to make choices and to exercise preferences. The goal of environmental arrangement therefore is to increase people's interest in the environment as an occasion for communication (Ostrosky & Kaiser, 1991). Arrangements can include the development of significant relationships, making communication part of routines, using communication to enable access to interesting materials and activities, providing models for appropriate communication and establishing a contingent relationship between access to materials, assistance or interaction and the use of communication strategies (Ostrosky & Kaiser, 1991).

The role that the physical and social environments play in the facilitation of communication involves a complex interplay of large numbers of variables (Richards & Sternberg, 1992). It was earlier suggested that the attitudes of those who work with individuals with severe disability are critical. Central to the making of choices and
decisions must be a positive expectation that an individual is capable of exercising preferences. Caregivers must also respect those choices and decisions when they are made, regardless of their personal opinions. Concurrent with positive attitudes must be the creation of multiple opportunities in which individuals can make real decisions and choices.

Research has suggested that people with severe disabilities, when they are offered choices, are "allowed" to make only the most trivial of decisions about their well being. Ironically, there is a strong body of evidence that supports the notion that people with severe disabilities are as interested in the whole of their lives as the rest of us yet have few chances to exercise control over their lives.

Without the potential to engage with others, to make choices about those things that affect their lives or to rehearse those skills associated with life in the typical community, people with severe disabilities continue to experience social isolation and a lack of self-determination. As a consequence, those skills which are regarded as essential to community inclusion continue to be denied this population. Inevitably this gives rise to the belief that people with severe disabilities are incapable of life without constant supervision. Thus their "childlike" status is confirmed and we can safely and satisfactorily assume that "They are so dependent on our help" (New Zealand Society for the Intellectually Handicapped fund raising slogan, 1972).

**Implications for this study**

The purpose of this study is to understand the communication used by adults with severe disabilities. It is suggested that all people communicate in some way and that recognition of these strategies will provide a basis on which people can begin to interact. As has been discussed however, adults with severe disabilities often lead overly regimented and isolated lives, even when resident in typical communities. Research has also shown that adults with severe disabilities tend to be thought of as childlike and incapable of adult thought or action. The consequence of these attitudes towards people with severe disabilities is that they may have little chance to interact with others, to have their wishes taken seriously or to engage in meaningful activity.
The environments in which people live can have either a positive or negative effect on their development and the opportunities available to them to demonstrate and to practise skills like choice-making and ultimately to be self-determining. When making an analysis of a person's skills, or in proposing interventions to remediate supposed deficits, researchers have traditionally focused on the individual's ability to demonstrate skills without the potential support of props in the environment. As a result, few people with severe disabilities have been observed to generalise decision-making skills beyond clinical settings.

The reality for people with severe disabilities, as we have seen, is that they are perceived to lack the ability to make choices, to self-determine, and in many instances, to communicate at all. So pervasive are these beliefs that many people with severe disabilities are denied the opportunity to demonstrate these skills, or even to develop them in the first place. If we are serious in our intentions to understand about communication and the skills of people with severe disabilities then our focus must move beyond the individual to their social world. An analysis of people's attitudes about those whom they support and an understanding of the opportunities available to people to participate in communication exchanges of one sort or another are essential to the assessment process.

Beyond assessment, attitudes must change and environments must become more supportive of interactions between people, of opportunities for decision-making and communication and of the right of people to actively participate in the determination of their own destinies. To achieve such an end, staff and caregivers must have the opportunity to confront and change their own beliefs about the people they support, they must be able to recognise and respect the decisions that people make and they must be able to perceive that there is value in doing so.
CHAPTER FIVE
Methodological Issues

How best can something like communication, an intensely social experience, rooted in culture and expressed in complex ways, be understood?

Introduction

It has been suggested in the literature that people with the most severe disabilities lack the means with which to state their choices (Baumgart et al., 1990), or to use communicative behaviour (Cirrin & Rowland, 1985). However, there has also been a recognition that sometimes people will use unusual behaviour to communicate their needs (Donnellan et al., 1984). Beliefs about the communicative abilities of people with severe disabilities have arisen as a result of communication and language intervention research with people with severe disabilities being essentially "problem driven" (Warren & Yoder, 1994, p. 5): first, to provide individuals with severe disabilities with the means to make choices and to exercise preferences, and second, to deal with difficult behaviour. Traditional beliefs about communication generally have suggested that skills will develop in a non disabled individual in a stage-like fashion (Musselwhite & St. Louis, 1988) irrespective of the context in which they occur (Rogoff, 1990) but that people with severe disabilities will require specific instruction with which to progress, as a result of their pathology (Anderson et al., 1992).

Communication intervention, usually based within an operant conditioning paradigm, has generally centred on the instruction of individuals with severe disabilities in those discrete aspects of communication thought to be central to the communication process (Jackson, 1993). Within this paradigm, isolated behaviours were examined for their communicative intent by an analysis of the setting events and consequences surrounding the behaviour in question (eg. Carr et al., 1994). Intent has typically been described from a narrow range of behavioural motivations including attention, escape and tangibles (Crawford et al., 1992). The result of this form of intervention has been that many people with severe disabilities have been taught a range of behaviours that were considered central to the communication process (eg. request-response) that they have rarely been seen to
generalise across their day-to-day lives (Halle, 1987) or to integrate into communication within social relationships.

More recently, research has begun to recognise the role of the environment in promoting communication between individuals with and without communication difficulties (Rowland & Schweigert, 1993). Central to this discussion has been the role of the communication partner in facilitating and supporting interactions. As has been discussed in earlier chapters, individuals with severe disabilities frequently have few opportunities in which to communicate with their non-disabled peers. This has arisen because many people with severe disabilities live overly regimented and isolated lives (Krauss, Seltzer, & Goodman, 1992b) and have access to few friendships and relationships that are truly reciprocal (Hayden et al., 1992). In this respect we have seen that the attitudes held by the staff and caregivers who support people with severe disabilities determine, to a large extent, whether interaction will occur at all (Miller et al., 1991; Murray & Minnes, 1994). This situation has been seen as resulting from the attitudes and beliefs that staff may hold about severe disability which preclude them expecting and therefore being receptive to, or facilitating communication and interaction generally. Additionally, it has been discussed that within the context of friendships and relationships and in the process of social interaction, those involved in communicative exchanges are better tuned in to the idiosyncrasies of their partner's behaviour, more reciprocal in their own behaviour and more facilitative of interaction generally (Grenot-Scheyer, 1994).

Communication is a complex social experience, rooted in our past, our present, our relationships and in our interactions with others. This being the case, those "others" involved in any communication with an individual experiencing severe disability, as well as the context in which that communication occurs, are integral to the success or otherwise of that communication. Indeed, any attempts to isolate those variables seen as supporting a traditional understanding about communication severely restrict the researcher's understandings about the communication process. Such a focus could allow researchers to assume that social interaction revolved around the acquisition of conversation skills (Hunt, Alwell, & Goetz, 1988), that interaction occurred
independent of relationships and that relationships were merely confounding variables to be avoided (Lovett, 1996). It will be argued that focusing on a narrow perception of what communication is, ultimately denies the humanity of those involved in the communication process and therefore fails to assist in the understanding of the communication skills and limitations experienced by people with severe disability. Guess and Siegel-Causey (1985, p. 232) made the point that:

> the prevalent behaviourally based technology used with severely handicapped persons (may) adversely affect the emergence of those human qualities that we are striving so hard to develop in them.

As well as contributing to the literature on the understanding of the communication used by people with severe disabilities, this study was committed to facilitating change in the lives of four people with severe communication difficulties and their staff and caregivers. Therefore, some sort of measurement of that change was required, as was a way of presenting key elements of the information gathered to demonstrate specific areas of need. To do this, observation of people in their natural contexts was essential. However, the interpretation of those observations would need to go well beyond an analysis of setting events and consequences. Analysis would need to include a greater depth of understanding about the totality of the lives (Heshusius, 1994) which people with communication difficulties live.

The scope of any methodology described to analyse communication must therefore be capable of identifying and making sense of all of those aspects of an individual's experience which enhance or hinder the occurrence of communication. To this end, a multi-method approach is discussed and advocated. In addition there follows a discussion of the implications of this approach to understanding communication assessment and intervention.

**Communication Assessment and Severe Disability**

While there has been an increasing acceptance that people without language do communicate, there have been few studies which attempt to understand the communication abilities of people with the most severe disabilities (McLean et al., 1996). Despite this, there has been an
assumption in the literature that as a result of their limited intellectual potential (Ferguson, 1994), these people will display only minimal responsiveness to visual, auditory and olfactory stimuli (Guess et al., 1993). While the behaviours used by a person with severe disabilities to initiate communication with others may be subtle and easily missed (Peck, 1985) any assessment strategy must be capable of recording potentially communicative behaviours. To this end, it must be able to identify and record any behaviour used in the presence of a potential communication partner as if that behaviour had communication value.

The conceptualisation of gestural and other physical behaviours as having a possible communication function for people with severe communication disabilities has significant implications for this study. In addition to the more obvious gestures that people use to communicate, the potentially communicative value of body orientation, distance, position in a room and even silence or lack of expression must be considered. An individual's communication therefore arises out of a complex pattern of behaviours that are learned over time and which are used by people in specific settings to convey specific information.

As has already been discussed, some studies maintain that people with severe communication disabilities respond to and attempt to engage in communications at a rate similar to the typical population (Ogletree et al., 1992) but that communication partners respond to few of these initiations (Houghton et al., 1987). Clearly, communication is not a solo performance. If an individual's communication initiations are ignored, an interaction fails to occur, not as a result of the failure of the individual with severe disability who has initiated an interaction, but because of the partner's failure to recognise and interpret the message (Butterfield & Arthur, 1995). Therefore, the role of the partner is critical to any assessment of the skills being demonstrated by individuals with severe disability. If communication intervention is to be an outcome of the assessment process then it is also essential to analyse the motives behind the actions of potential communication partners. An analysis such as this is essential in order to understand the reasons why a communication partner's behaviour either supports or hinders the communication process. To this end, detailed contextual information as to the stimulation provided by the social environment
which might support or elicit communication (Rowland & Schweigert, 1993) from individuals with severe disability completes the picture of those individuals as participants in communicative interactions. Only with the collection of such detailed contextual information can the "ongoing set of relationships in an interaction which make up an event" (Gleason, 1993, p. 165) be understood.

The fact that people do learn from their past experiences and apply this learning to novel situations later in their lives cannot be explained by an analysis of immediate external pressures alone - namely, setting events and consequences. Interaction and relationship patterns between people vary, as do the contexts of their experiences. Numbers of researchers working within a behavioural model assert that relationships, interaction patterns and experience are variables which are not useful in an assessment of communicative intent (Carr et al., 1994, p. 64). To "know" or to understand about a communication act however, the researcher must be concerned with all of those aspects of the act that contribute to it. Communication is an intensely human experience, it is rooted in relationships, it is central to culture and indeed, to our humanity. Gleason (1993, p. 159) stated that to seek understanding about communication:

...is to explore the meaning of an event in a spatial and temporal context that respects their (people who don't use verbal language) patterns of interaction, communication and participation.

In this sense communication is about making meaning in relationships and as such, any inquiry into communication should be about understanding meaning in those relationships. The research process is one of perceptual differentiation, involving the ability to see what is subtle but significant. Therefore, it is essential that any assessment strategy must gather information over time, it must be based within the context of people's everyday lives, and it must seek to expose those aspects of an individual's experience which inform their beliefs and actions. While it may be argued that the intent of this form of research is not dissimilar to the more traditional methods of understanding communication, fundamental differences do exist in respect of the orientation of the researcher.
Within a behavioural model that focuses on setting events and consequences alone, the focus has been on remediating behaviour (usually that categorised as aberrant) rather than on trying to understand what the individual means by what he or she are doing from within the context of their life and limitations (Gleason, 1993). In the pursuit of objectivity (Berman, 1989, p. 117), this model has reinforced the notion that "we", the researchers, see all there is that is important because the individuals on which our experiments or observations are based, live and work in distinct settings which may be understood as if they were independent of other contexts (Carr & Kemmis, 1986). Attempts to approach an inquiry into communication from this "value free" (Carr & Kemmis, 1986) perspective assumes that there are unalterable "facts" that can be discovered about particular social situations and about individuals.

In the approach to the study of communication described above, what people do, not what they mean by doing it, is the critical component on which to base intervention. It is as if action is deprived of its meaning and in its place a "sort of causal interpretation"(Carr & Kemmis, 1986, p. 89) is substituted. Inevitably standardisation demands (which involve the application of empirical specifications for behaviours deemed to be of significance) suppress the unique understandings and interpretations inherent in any communication transaction (Eisner, 1991). In addition, they provide little more than a "truth test" (Lather, 1986), or in Foucault's words, "a power knowledge formation" (Usher & Edwards, 1994), with which to confirm preconceived understandings about individuals (Guess & Siegel-Causey, 1985). While the categorisation of setting events and consequences can sometimes help us to know the origin and maintenance of a behaviour within specific stimulus conditions, it significantly limits our understanding of the wider experiences of the individual using behaviour. Usher and Edwards (1994, p. 40) described behaviourist methodology as being an attempt at:

seeking explanations at the level of systematic processes and functions rather than at the level of subjectivity.

While an understanding of "systematic processes and functions" is often useful, communication is a subjective experience that is not sufficiently
understood at a functional level. Usher and Edwards (1994) make the point that the seeking of explanations at a functional level emphasises a concern with the "how" questions as against the "why". With respect to communication, in order to understand why a person responds and initiates as they do, we need to understand that individual's experience and their perceptions and interpretations of their experiences (Eisner, 1991). The intention is to discover what sustains an individual: "the subjective experience of how mind and body interact" (Berman, 1989, p.128) to allow us to know who, in this case, people with severe disabilities are and what those people's interests and wishes may be.

To understand an individual's communication we need to understand their actions (Carr & Kemmis, 1986) and what they mean by them. Meaning however, is intelligible to others only by reference to the meaning attached to that action by the actor within a particular social context. To understand motive and intention, to grasp the "subjective meaning" (Carr & Kemmis, 1986, p. 68) of an action, the researcher must attempt an understanding of the motives of the behaviour of other people, not just those individuals under investigation. Peoples' actions arise from a network of meanings which have been defined by their past and by the present social order. Clearly, to understand the nature of communication we need a methodology that deals with the human issues of people engaged in communicative acts, as well as the qualities that particular individuals bring to those transactions. It is, as Sears (1992, p. 152) states:

the ability to momentarily stop internal dialogue and to engage reflectively in a search for the meanings constructed by others and ourselves.

**Implications for this study**

With respect to communication it has been argued that there is little point in restricting study to predetermined intents of behaviour such as attention, escape, tangibles or sensory stimulation (Crawford et al., 1992), or to the "quantifiable" manifestations of those behaviours. Intents such as these are only inferences about the causes of or reasons behind behaviour. They restrict the gaze of the researcher and they limit the behaviours of individuals with communication difficulties to specific exchanges for particular purposes. In doing so, we describe
request, response and comment as social interaction (Hunt et al., 1988) and irritability, lethargy, stereotypic behaviour and inappropriate speech as aberrant (Aman, Burrow, & Wolford, 1995). When we do this we forget the impact on our interactions of relationships between people, the environment and the everyday demands that people have imposed on them, not to mention the impact that an assessment of an individual's communication could have on that communication (Barlow, Hayes, & Nelson, 1984 p. 159). So, our observations need to allow the "meaning of the behaviour to emerge from its function in the larger systems, not in the event itself" (Howell and Vetter, 1976 cited in Lovett, 1996, p. 106).

Detailed behavioural field note observations over time therefore constitute an essential element to this study. In addition, since change is a desired outcome of the study, key indicators of the change process are important. The identification of key indicators of change should not however be confused with the adoption of a behaviourist methodology. Indicators emerge from the observational data (Bogdan & Taylor, 1992); they are not cause for observation. It is the observed information that determines how key indicators of change are identified and categorised. Such information is only available with a thorough understanding of the social and physical environment in which communication occurs.

The Environmental Context of Communication

A number of recent studies (eg. Guess et al., 1993; Rowland & Schweigert, 1993) have highlighted the importance of the environment to the communication process. Guess et al., (1993) go so far as to note that the dynamic interaction of environmental variables (exogenous, such as disabled and non disabled others, activity, the physical environment) and those variables related to individuals (endogenous, such as developmental skills) has a significant effect on both the development of new skills and the maintenance and demonstration of existing skills.

The analysis of an individual's communication skills alone, no matter how detailed, ignores the significance of the interaction of the particular social and physical environment with the individual in question. In our
haste to describe lethargy as aberrant (Aman et al., 1995) we all too readily forget the role of support people and caregivers in the suppression or sustaining and promotion of communication and other skills. It is as if, on the one hand, we accept the limitations that severe disability imposes on the individuals experiencing them, yet on the other we make the people with those disabilities wholly responsible for their behaviours in particular situations. In their study, Guess et al., (1993) found relatively high incidences of stereotypic behaviour amongst the people they observed. While there has been an assumption that high levels of stereotypic behaviour are indicators of intellectual impairment (Anderson et al., 1992), an alternative explanation would suggest that stereotypic behaviours could well arise as a result of frustration or boredom. Few researchers, however, have ever considered the impact of unstimulating institutional or other environments on communication (Kaiser et al., 1993).

In trying to account for the "why" of others' actions (Eisner, 1991), a multi-dimensional approach seems critical. In this context, historical antecedents (Lather, 1986), or those things that an individual brings to an interaction, as much as setting events, provide a background against which people's behaviours can be understood: "what people experience is, in part, shaped by their personal history" (Eisner, 1991, p. 36). While it is clear that a record of the behaviours used by individuals with communication difficulties in their interactions is important, so too are the behaviours of others, in particular, an "awareness of the contradictions hidden or distorted by everyday understandings" (Lather, 1986, p. 259). The understanding of experience is dependent on the context of that experience and the strategies we have to interpret it. Unlike the behaviourist assertion that action is event related, the method advocated in this study involves taking in the larger system in which an action is perpetrated (Lovett, 1996) or experience is gained. As noted by Carr and Kemmis (1986, p. 89):

The claim that human actions are meaningful involves more than a reference to the conscious intentions of individuals. It also involves understanding the social context within which such intentions make sense...

It is the social context in which an individual lives and works that creates social order and ultimately an individual's social role. The structuring of an individual's interpretation of reality grows out of her
or his social role (Carr & Kemmis, 1986). Behaviourist research has attempted to counter the experience of the individual by depersonalising the place of the research participants in the research process (Eisner, 1991). With respect to the understanding of communication however, the social milieu in which individuals interact is essential to an understanding of their communication, as are the relationships people have with others. These analyses of experiences cannot be objectified or made value free.

Inquiry in the field of communication must therefore include the expectations of others regarding individuals with communication difficulties, or whether the climate is supportive of interaction, in addition to those skills and limitations which individuals with disability bring to an interaction. Understanding the role of others, their attitudes to disability, their perceptions of disabled people, the physical environment, and the "prosthetics" available in that environment to stimulate communication, will all contribute to an understanding of how people behave and how they learn (Eisner, 1991). The task of the inquirer is therefore, as described by Giddens (cited in Lather, 1986, p. 262):

explore the nature of the intersection between choice and constraint and to centre on questions of power.

Central to any discussion about communication is the recognition that communication cannot happen in isolation. Critical to that experience is the humanity of those engaged in the act. Until we understand that point, we cannot understand the process. While we focus on ascribing intent to behaviours based on the immediate context, that is all we will see. As our relationships with people grow, so do our understandings about them. Restricting our interests to the objective and to the immediately observable ignores the role of experience (of all of those involved), the impact of relationships and ultimately denies the humanity of the individual/s in question. Eisner (1991, p. 4) makes the point that:

The reason for explaining voice and other tropes (the figurative use of a word) is not to gussy up language so that it is "humanistic" or "artsy"; it is to serve epistemological interests. What we look for, as well as what we see and say, is influenced by the tools we know how to use and believe to be appropriate.
Implications for this study

Communication occurs in social contexts. While observation constitutes a critical element of the process of understanding the communication of people with severe disabilities, it is but one part of the process which seeks to understand the contexts in which people live and work. The environment in which people interact, the activities available to them and the arrangement of that environment to facilitate communication impact on the process itself. People with severe disabilities frequently experience difficulties in intentional movement, initiating action, and in maintaining their involvement in actions. The role of support people in assisting individuals to adapt to these difficulties is therefore critical. The motivation of staff to work in the field of disability and their feelings about those with whom they work (Goodley, 1996) will also impact on the opportunities they create for communication.

While it is possible to record the behaviour of the participants in any interaction, the attitudes behind behaviours are not always so apparent. Unless staff actually believe that the people with whom they work are capable of communication, making decisions, and ultimately, a degree of autonomy, staff will be unlikely to offer the opportunities that people need to develop those skills. An understanding of the attitudes and beliefs about disability held by staff and the effect this has on the way that they interact with the disabled participants in this study are therefore critical.

Issues of Reliability and Validity

In respect of the reliability and validity of the findings of qualitative research, researchers have the responsibility to represent what they have found in ways that are coherent, credible and believable. The voice of the researcher is therefore central to the trustworthiness of a study; it shapes, focuses and directs our attention in particular ways and what we experience is shaped by that framework (Eisner, 1991). Researchers have the responsibility to be open about their own experience and to explain how their beliefs and understandings about the focus of the
research (in this case the communication process) have shaped their actions, rather than attempting to hide them within a scientific discourse emphasising literal interpretation as the ideal. To this end, the researcher's experience is a subjectivity that cannot be easily accounted for or hidden within some objective methodology. Just like any participant in a communication exchange, the interpretation of that event will bear the stamp of the individual making it. How any researchers interpret what they see will bear their own signature. This should not be seen as a liability. Rather, it is a way of providing individual insight or "practical wisdom".

Practical wisdom does not offer the definitive answer; rather, it acknowledges that there probably are no easy or final answers. But practical wisdom does seek meaning and significance, a way of understanding experience in the hope of improving experience. Research as reflection on experience can enable us to become more aware, to see again that which we have come to take for granted, to find the significant in the insignificant. (Adler, 1993, p. 160)

A study such as this therefore becomes believable not by any claim to "objectivity", but as a result of its coherence, insight and instrumental utility. Persuasion comes from weight of evidence from different sources, by the coherence of information and by its cogency (Stainback & Stainback, 1984). In this study a number of observers in addition to the principal researcher gathered the data that make up the running records and environmental checklists. The quantitative information which is extracted from the field notes and the data from the environmental checklists are subjected to inter-observer agreement checks to determine the reliability of that data collection. Regular meetings involving a number of people from the related disciplines of psychology, speech language therapy, occupational therapy and education reviewed the data collected and commented on the issues raised. The staff being observed in their interactions with the disabled participants also provided feedback on the credibility of the interpretations made of the events under observation. The central task of a piece of research such as this therefore, was to confront issues of accountability by providing as noted by Lather (1986, p. 259):

reasons to accept the researcher's description and analysis and the search for workable ways of establishing a trustworthiness of data
If we accept that communication is a transaction between people, judgements by researchers about the nature of that transaction must in the first instance achieve credibility in a particular research or other context (Kincheloe & McLaren, 1994), even where judgements are significantly at odds with the ways in which participants might see their actions. The coherence of the findings is critical in this respect. "Facts" never speak for themselves; inquiry is always a matter of persuasion. To this end, the collection of data from numbers of sources such as observation and interview can provide the structural corroboration (Eisner, 1991) that is central to the achievement of credible results. Secondly, the degree to which a study can act as a catalyst for change (Guba & Lincoln, 1994) or towards socially relevant outcomes (Ford & Gaylord-Ross, 1991) can confirm its cogency (Kincheloe & McLaren, 1994). The inquirer in this case, "is cast in the role of instigator and facilitator" (Kincheloe & McLaren, 1994, p. 113).

Change will occur only when those involved in the change process see some value in adopting the strategies advocated. People with communication difficulties will only use strategies that are more efficient than their current communicative behaviours (Beukelman & Mirenda, 1992). Staff and caregivers will only use new strategies or adopt new behaviours where they can see real benefits for their clients or where their working lives are made easier. No amount of "best practice" will be acceptable if it is perceived to be time consuming, difficult to understand or beyond what people need in their day-to-day lives.

The researcher's role is to search for an understanding of a situation from the perspectives of all of the key participants, the factors which created the situation, and on those bases, to make some analysis of that situation. It is not simply a matter of checking and counting behaviours with the aid of an observation guide, but rather a matter of perceiving the presence of specific behaviours and interpreting their significance in light of those other things happening in an individual's social and physical environment. Stainback and Stainback (1984) make the point that,

Almost any role assumed by the researcher can result in worthwhile data, since data gathered under any given role relationship with the subjects in
the research site does delineate some facet of reality. As Glaser and Strauss (1967) have noted, each of these facets constitute a slice of data which when taken together with other pieces of data can contribute to a total picture. (Stainback & Stainback, 1984, p. 298)

**Conclusion**

In summary, the eye of the researcher must not be constrained by those aspects of behaviour which they think constitute the act of communication. Communication is a complex process, grounded in opportunity, relationship, interaction, attitude and experience. To understand the communication strategies which anybody uses, the researcher must look beyond the immediately observable and quantifiable if he or she wants to make interpretations about the things that people do, why they do them and the difficulties they experience. While it is essential to identify key indicators of the process, in order that change can be accounted for, these must emerge from the data collected. The result of doing otherwise would be to restrict the gaze of the researcher and to oversimplify the act of, and motivation for, interacting with others and the environment.

Communication can only occur in a social context. Any analysis of communication must account for the impact of that context. Analysis therefore is undertaken on an accumulation of experiences from a wide range of sources. Recognition of the importance and relevance of any of that information is part of the role of the researcher. The credibility of this sort of analysis is based on the consistency of findings from throughout the study, by the weight of the evidence gathered, its coherence, the cogency of the discussion of findings, and the reflection and involvement of others in the research process.

One of the goals of this study was to make some change in the lives of people with severe communication difficulties. In this respect, the recognition that change can only occur from within an organisation or structure is significant. Integral to the change process is the presentation of material that can graphically illustrate where change needs to occur, when it has, and what the effects of that change are. Direct care staff come from a wide range of backgrounds, some having
little training or experience and others with professional expertise (Murray & Minnes, 1994). Consequently the information presented to people must be accessible to a wide audience. If people cannot see change, either directly or by the presentation of results, they will be less likely to change their own behaviour. The methodological issues raised establish a route to bring together the academic demands required of studies of this nature, the very human requirements of those experiencing communication difficulties, and those who interact with them. Lovett (1996, p. 107) made the point that:

One division made from time to time is that between professionals and the community. It seems to me that this parallels the differences we traditionally assign to our heads and our hearts: professionals taking on the role of cerebral and potentially heartless scientists and the community acting as all-caring, but not necessarily well-informed, enthusiasts. Just as no one functions very well or for very long without the active interplay between heart and head, neither do our services work very well when only one kind of knowing dominates.
CHAPTER SIX

Method

Description and justification of the measures used to understand the communicative experiences of four people with severe disabilities and those who live with, care for, and work with them. The description and justification of the procedures used in making changes to the communication opportunities available to people with severe disabilities.

Introduction

The intention of this study was to identify and understand the ways in which people with severe intellectual disabilities interacted with others in their daily lives. Central to this was an understanding of the ways in which other people and the activities and opportunities available in the social and physical environment affected the communication process.

The communication of people with severe disabilities has most often been researched from within a behaviourist model. In this respect, communication has predominantly been seen to occur for only a limited number of reasons such as attention, escape, sensory stimulation (Crawford et al., 1992) and relationships have been seen as being "confounding variables" (Carr et al., 1994). An alternative approach to inquiry is needed if communication is seen as a complex phenomenon arising from and integral to relationships, patterns of interaction and participation (Gleason, 1993). Such an approach to assessment and to evaluating intervention would take into account the beliefs and actions of other people which facilitate, or mitigate against, communication occurring.

In order to understand communication therefore, the wider parameters (Heshusius, 1994) of the communication experiences of all of the disabled and other participants in a study need to be addressed. To this end it is necessary to:

enter into the lives of the people being studied as fully and naturally as possible. It requires a long term involvement, so that the presence of the investigator becomes a natural condition. The researcher listens to what
people say, observes what they do, asks them questions when appropriate, and participates in their activities when ever possible. (Stainback & Stainback, 1989, p. 271)

In respect of communication, any data collection methods used must yield sufficient information to enable an analysis of what people do when attempting to establish, or when engaging in, communicative interactions, together with information on the supports available from the social and physical environment. In the present study, continuous running records were taken of the behaviour used by individuals with communication difficulties and the behaviour or speech of anybody who interacted with them during an observation. In addition, a checklist of those aspects of the environment that were seen to support communication was also compiled.

People with severe disabilities are often described as having few skills with which to communicate (Guess et al., 1993). The provision of augmentative communication strategies that might enhance the communication used by people with severe disabilities was a central goal of the present study. As a result of the support needs of people with severe disabilities, any augmentative communication strategy that was to be introduced would have to be supported by staff over long periods of time. To assist staff to adapt to the communication needs of the people they supported, it was necessary to identify some way of showing where change needed to occur that was readily acceptable and easy to understand. In addition, a straight forward method of recording change, over and above that available from the running records and environmental checklist was also important. To this end, a simple way of coding key behaviours was developed. Specific behaviours were extracted from the running records and coded subsequent to the observations completed in both settings.

Throughout the study a multi-disciplinary team comprising educational researchers, a neuro-psychologist, speech language therapists, an occupational therapist and the researcher and observers met regularly to discuss progress and to make suggestions on the development of the study and the assessment strategies arising from the findings. The researcher and observers also met separately to reflect on what they
had observed, to make interpretations of the observations and to
determine further needs for data collection.

The present study was divided into three phases (see Figure 6.1, p. 73). During phase one, initial data were collected to trial the measures. Baseline data were then taken with the use of running records, coded observations and the environmental checklist. This information was then used to write individual communication profiles on each of the disabled participants. Profiles were written for each participant which described the skills and needs that each person had with respect to communication. Each profile also included information on the supports available to people and the circumstances in which communication was difficult in both the residential or vocational setting.

Individual augmentative communication strategies were then to be developed from these profiles and introduced to the disabled participants and the staff who worked with and cared for them. My conception of the communication needs of people with severe disabilities was that having assessed their communication skills I would need to provide augmentative strategies and training in their use. However, initial data collection indicated that staff behaviour was the key issue.

During phase one, staff were interviewed. At the end of this phase, staff training was undertaken. Training sessions took place in both the residential and the vocational settings. The profiles presented at these sessions included information on the communication environment relevant to the setting in which training took place. After the presentation of profiles, a problem solving session took place. Data collection continued through phase two during which a group interview and discussion with staff occurred. The second intervention, involved the provision of individual communication strategies. Data continued to be taken through phase three of the study.

This chapter is divided into four sections relating to each step of the study (see Figure 6.1). The first section (1) describes the process used in determining, identifying and selecting the participants for this study. Included in this section is a discussion of the ethical procedures used to
achieve consent. Since the people with severe disabilities selected for participation in this study did not communicate verbally or through augmentative means, informed consent could not be gained from them. Discussion follows on the checks and balances required to ensure that, as far as possible, these participants were informed about the study and were protected by legal and ethical safeguards.

The second section of this chapter (2 in Figure 6.1) discusses the development of those measures used to describe the communication strategies used by the disabled individuals in this study and the social and physical environments in which they lived and worked. In particular, discussion focuses on a rationale for the development of the running records, the coded observational categories derived from those records and the environmental checklist. The procedures used to train observers and to collect the data using the running records, coded behaviours extracted from the running records and the environmental checklist are also described. A review of the literature and discussion of the development of the interview schedules used with all of the staff follows, along with a description of the procedures used in training the interviewers and in completing the interviews. Issues of the reliability and validity of the measures used and the measurement of change completes this section.

Section three of the chapter (3 in Figure 6.1) describes the three phases of the study and justifies the reasoning behind such a format. In addition, the interventions completed at the beginning of phase two and phase three are described and discussed.

The final section of this chapter details the methods of data analysis used in each of the three phases of the study.
Figure 6.1: **Organisation of Chapter Six: Method.**

<table>
<thead>
<tr>
<th>(1) Participants:</th>
<th>(2) How can the communication of people with severe disabilities be understood?</th>
</tr>
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<tr>
<td>Who were they?</td>
<td>Development of observational measures and interview procedure.</td>
</tr>
<tr>
<td>Why was this group chosen?</td>
<td>Focus: Observation of people in their social worlds: Running records and Coded Observational Categories</td>
</tr>
<tr>
<td>How were they selected?</td>
<td>Focus: The environments in which people live and work: The Environmental checklist studying activities, relationships and physical environments</td>
</tr>
<tr>
<td>What were the ethical procedures used in gaining consent?</td>
<td>Focus: The nondisabled people with whom individuals with communication difficulties interact: Interviews about attitudes, beliefs and practices</td>
</tr>
</tbody>
</table>

Training observers, trialling and refining the codes to measure change. Use of running records, coded observations and the environmental checklist. Training interviewers. Interview procedure. Observer Agreement and Establishing Validity Assessment of Change

(3) The three phases of the study: Phase One (5 months), initial data collection, baseline data collection to determine what people are doing when they try to communicate, how frequently they do it and the responses they get (running record and coding), what supports there are in the social and physical environment (environmental checklist) and what drives the things that staff do (interviews). Development of communication profiles, staff training. Phase Two (3 months) on-going completion of running records, coding and environmental checklist to record change. Focus interviews with staff. Phase Three (2 months) introduction of individual communication strategies. Liaison, consultation and problem solving with individual staff. On-going completion of running records, coding and environmental checklist to record change.

(4) Analysis of Results
Participants

Several local organisations providing residential care for people with intellectual disabilities were asked about their possible interest in the study. After this initial approach, interested service providers were asked to identify people in their care who met the following criteria for inclusion:

- a diagnosis of severe intellectual disability (Godfrey, Frost, Snelling, Knight, Shelton, & Longmore, 1986);
- no functional verbal language (Kiernan & Reid, 1987);
- did not use any formal augmentative communication strategy or system;
- had no obvious physical disabilities that would preclude the use of a low cost augmentative communication system.

Those ultimately selected all lived in the same residential setting and used the same vocational day service. In this study they are referred to as Dean who was 34 years old, Glenn who was 28, Helen who was 39 and Vivienne who at 42 years was the eldest in the group. All of the disabled participants had previously resided in wards for people with intellectual disabilities in a psychiatric hospital near to the city in which this study was completed. Prior to the hospital's closure three years before the study began, the participants had been resident there for between 12 and 36 years (average 25 years).

The second group of participants was comprised of all of the staff involved in the care and support provided to Dean, Glenn, Helen and Vivienne. Eight staff worked at different times and on different days in the vocational setting which the disabled participants attended on four days of the week. A further eight staff provided 24 hour support over three eight hour shifts in the residential setting in which Dean, Glenn, Helen and Vivienne lived. Four of the staff in the vocational setting and one of the staff in the residential setting had professional training in education, nursing, occupational therapy and social work. One staff member in each setting was receiving ongoing tertiary training and the others had no training in this field of work. For more detailed descriptions of the settings refer to p135.
Reason for Selection

Most people with severe intellectual disabilities experience significant difficulties in communication, sometimes leading to behavioural effects such as self injury and aggression towards other people or property. Dean, Glenn, Helen and Vivienne, like many other adults in New Zealand who have severe intellectual disabilities, had not had access to communication interventions because of a lack of specialist staff training and resources in the institutional and residential settings in which they lived. Consequently, the assessment of their idiosyncratic communication skills and the strategies which they used could be undertaken without the results being affected by the use of strategies that they may have learned as a result of earlier communication training. In addition, those involved in the research process should also gain by it (Oliver, 1992). To this end, these people were perceived as being disadvantaged by the experiences that they had been denied. The provision of individually tailored augmentative communication strategies during the study and some staff training in the field of communication would go some small way towards redressing the lack of access that Dean, Glenn, Helen and Vivienne had to the services that today should be theirs by right. In New Zealand, the Code of Health and Disability Consumer' Rights 1996 mandates that all people receiving health and disability related services have the right to effective communication.

Information to Participants and Consent

Subsequent to their selection, Dean, Glenn, Helen and Vivienne, their families and the staff who worked with them were invited to meet informally with the researcher, research programme supervisor, the research assistants who would act as observers for the duration of the project and the advisory team described in the previous chapter. At this meeting introductions were made and an outline of the purpose of the research project was given. The people attending the meeting were informed that the aim of the study was to understand the conditions which supported the communication attempts made by people with severe disabilities. To this end it would be necessary to observe the
strategies people were using from within the context of their daily lives and then to use that information to prepare profiles on each of the four disabled individuals. It was explained that arising from these profiles and analyses of the environmental conditions supporting communication, individual communication strategies would be designed and training programmes delivered to support the development of those communication strategies. (Since this study was undertaken, procedures to be followed regarding the participation of such people, i.e. who cannot give informed consent, in research has been codified in the Code of Health and Disability Consumers' Rights 1996.)

Some days after this meeting, all of the participants were approached for formal consent for inclusion in the study. To meet the criteria for inclusion, Dean, Glenn, Helen and Vivienne should not have any functional verbal communication, nor could they use any augmentative strategies that would enable consent to be understood. Therefore, consent to participate in the study was sought from any welfare guardian who had been appointed by the Family Court to oversee the affairs of Dean, Glenn, Helen or Vivienne. Where no such guardian existed, consent was sought from the next-of-kin recorded in their client file. In addition, an independent advocate who had been appointed by the next-of-kin to oversee the "best interests" of their family member also provided informed consent for their initial and continued participation in the study.

Prior to giving consent, next-of-kin were required to inform the disabled individuals as best they could about the research and, using their knowledge and relationship with those people, to try to ascertain whether they were happy to participate. If any of the four principal participants showed distress during any of the observations or during the introduction and use of their individual communication strategies, their continued involvement was to be considered by a group consisting of the researcher, next-of-kin, the independent advocate, the manager of the service and their key worker.

Informed consent was also obtained from all of the participating staff. At all times, the right of staff to decline to participate in the study and to withdraw from the study was stressed with the service managers.
Additionally, open lines of communication were maintained with the managers in each setting and the staff. Clarification of staff or client involvement in the study was facilitated by this. Subsequent to initial data collection, when it became apparent that the role of the communication partners was more important than had been anticipated, extra consents were gained from all of the staff to participate in interviews. At this time staff were informed that they would be asked about their background and experience in this field. They would also be asked to discuss their understandings about communication, their perceptions of the communicative skills of each of the participants and their goals with respect to community integration and participation.

All of the information collected from observations was coded to protect the privacy of the individuals involved and pseudonyms have been used throughout the study when referring to individuals. All of those involved in taking observations, preparing transcripts or providing supervision for the study were bound by rules of confidentiality prior to involvement in the study.

Ethical consent for this study was gained in the first instance from the appropriate local Accredited Ethics Committee. Consent was also gained from the University of Otago Education Department's Ethics Committee who oversaw the ethical approval for studies from within that Department.

**Development of Data Collection Strategies**

**Running records**

Extensive running records of the behaviour of Dean, Glenn, Helen and Vivienne and all of those who interacted with them were completed. These provided the rich descriptive data necessary to understand the actions of the disabled participants and those of their communication partners. In particular, they allowed an understanding of each person's skills in communication, the effect of the context on communication and how the experience of interacting with specific individuals affected the communication process (Gleason, 1993). In some cases it was also possible to speculate on the purposes to which communicative
behaviour was directed and on the meaning and beliefs behind the actions of the participants in communicative exchanges.

Communication is a complex social phenomenon. At one level it is about the transmission of information (Jackson, 1993) in culturally acknowledged and accepted ways, about getting or gaining messages, about interaction and about influence (Butterfield & Arthur, 1995). At another level it is about agency (Cirrin & Rowland, 1985), membership (Ferguson, 1994), social interaction (Rogoff, 1990), and relationships (Grenot-Scheyer, 1994). In order to understand about communication therefore, the researcher must attempt to gain an understanding, and make sense, of the multiple influences affecting the experience. Therefore, in-depth data must be gathered about all of those people who engage in communicative interactions in order to establish how communication takes place and how others affect the process.

The majority of the research studies which has set out to understand the communication of people with severe disabilities have done so with the use of observational strategies in which observers were required to assign predetermined codes to the specific behaviours they observed (eg. Carr et al., 1994; Donnellan et al., 1984; Felce, Kock, & Repp, 1986; Guess et al., 1993; Houghton et al., 1987; Kuder & Bryen, 1991).

Any observational strategy using codes requires the observer to interpret the characteristics, origins, outcomes and intent of an observed behaviour in order that it can be coded. In relation to studies on communication, the observer has had to code behaviours according to their communicative intent (Carr et al., 1994; Donnellan et al., 1984; Felce et al., 1986; Houghton et al., 1987; Kuder & Bryen, 1991). To ascribe intent to a behaviour, it was necessary to analyse the context in which the behaviour occurred. As noted by Donnellan et al., (1984, p. 202):

It is important to note that it is the functional relationship between behaviour and context rather than the topography of the behaviour alone that is indicative of its motivational source or communicative intent.

In general, and with respect to the coding of communicative intent, the context in which an interaction occurs has been interpreted to mean the
immediate antecedents and consequences around the behaviour in question (Crawford et al., 1992). However, context is related to many variables of which setting events and consequences are but one part. In assuming that an individual's behaviour will be related only to the immediate past or the likely response, we ignore the social situation, relationships, opportunities for communication or the degree to which the limitations imposed on an individual's behaviour by their impairment will affect the ways in which they interact with others.

As a social transaction, communication is affected by a multiplicity of variables and it is motivated by numerous factors. Typically the communicative intent behind the behaviours of people with severe disabilities has been inferred from within a narrow range of assumed motivating factors. Similarly, when the behaviour of the staff supporting people with severe disabilities has been analysed, intent has been inferred on the basis that staff will only want to interact with individuals with severe disabilities to give instructions, to model appropriate behaviour or to give guidance (Felce et al., 1986). To assume that people with severe disabilities will only use their behaviour to get attention, to escape, to receive tangibles or for sensory stimulation (Carr et al., 1994) or that staff will (and should) mostly instruct or guide their clients (Markova et al., 1992) is to impose a narrow and restrictive view on the communication process and on the humanity (Bogdan & Taylor, 1992) of those under observation.

The critical factors to establish in any assessment of the strategies people with severe disabilities are using for communication are whether they are attempting to communicate and how they are doing it. Therefore, any observation tool that is to be used as a basis for the further development of communication or interaction or choice making skills must be capable of identifying all behaviours "as if" (Kaiser & Goetz, 1993) those behaviours have meaning. To begin observations from the perspective that there are a few specific behaviours which describe the communication process results in a very narrow view of the use of behaviour for communication. We cannot overlook the potential for other behaviours to have meaning to the individual and the potential for those behaviours to be capable of influencing another.
The challenge for the field of research into severe disability is to find meaning in the behaviours that people use. That is:

order and repetition in shared, learned patterns (which) provide the opportunity to define the meaning of events in a person's life. Attributes associated with their multiple disabilities do not define the person or define meaning. To discover meaning in their terms at the implicit level is to interpret what they do with others based on their actions. (Gleason, 1993, p. 166)

To do so, researchers must begin to "see, understand and experience complex human phenomena outside of clinical dichotomies for explanation" (Gleason, 1993, p. 159). It is in the everyday experiences of people that their senses of reality are created (Goode, 1994). Since human experience is complex, subtle and constantly changing (Maykut & Morehouse, 1994), any tool capable of assessing communication must therefore capture those experiences in the environments in which they occur (Adler & Adler, 1994). In the present study, detailed running records provided a longitudinal record of the behaviours used by individuals with disabilities in a communicative sense as well as the support they received from their social environment. The justifications used in a similar study (Chadsey-Rusch & Gonzalez, 1988) are relevant here:

This methodology was chosen for two reasons: (a) to ensure that frequently occurring and important social behaviours were not missed due to a priori behavioural codes and (b) to ensure that the behaviours were recorded within the social context in which they occurred. (Chadsey-Rusch & Gonzalez, 1988, p. 230)

Running records are sometimes described as participant observations (Bogdan & Biklen, 1982) or detailed field notes of behaviour. In this study, the observers were present in the setting in which observations were taken but during the period of observation they did not interact or participate with anybody else. Their role was to produce a record (Adler & Adler, 1994) of all of the behaviours used by Dean, Glenn, Helen and Vivienne, the behaviours and speech of others who interacted with them and the things taking place in the environment in which they were completing their observations.
Coded Observations

While it may have been possible to see changes in patterns of behaviour in the running records resulting from intervention, it was considered that assessment of the extent of those changes may not be possible using that observation strategy alone. Based on the context in which interactions occurred and on the patterns of behaviour which emerged, the running records described, among other things, the communicative behaviours of all of the participants, the ways in which people established or participated in interactions and the events occurring around the communication taking place. These all combined to create communication opportunities and interactions. Even if measurement of individual items was possible, none of the individual behaviours described could be said to have constituted the actual communication process and consequently would not measure change in that process. As in any social behaviour, a large number of variables constitute and are central to the communication process:

...rather than viewing choice making as a single target behaviour, an array of related behaviours that comprise the target must be considered. For example...rate and intensity of on task behaviour, descriptive information on socialisation, facial expression and body language...responses to interview questions...behaviour, not as a series of isolated target behaviours, but as a network of interactive behaviours existing in a material and social context, in which students and teachers are both interactive participants. (Shevin & Klein, 1984, p. 161)

Although focusing on an isolated target behaviour is an inadequate assessment of communication, it may provide an indicator of change in the communication taking place between individuals. A review of the literature completed by the researcher with respect to interaction (Felce et al., 1986), the coded categories of choice making (Houghton et al., 1987; Shevin & Klein, 1984) and pragmatics (Donnellan et al., 1984), while not particularly useful in describing the actual communication process, did provide a means with which to measure change. Once identified, codes are reliable in that they measure the same things over time, they provide quantitative data which can be easily summarised in table or graphic form, and existing levels of coded responses can be accurately compared with similar data collected subsequent to an intervention to provide a measure against which change can be described.
Initial data collection in the present study identified that the key issues which coded data might highlight were: the degree to which Dean, Glenn, Helen and Vivienne were attempting to establish and respond to interactions; whether staff were doing the same; how staff encouraged communication; how frequently interactions occurred and how long they were. In addition to the detailed assessment data provided by the running records, therefore, coded observational categories of specific behaviours within the running records were extracted from those records after observations had been completed. This procedure allowed for data to be coded in a much more thoughtful way than is generally possible when instant decisions have to be made about the nature of behaviours being observed.

The coded categories of behaviour used in this study were communication opportunity, response, interactions, encourager and discourager. Each is defined as:

**Communication Opportunity (CO)** which was defined as "any behaviour or speech used by an individual which provided the opportunity for a response from another". This definition included behaviour which was described as interactive, or behaviour which was not necessarily interactive but which provided the observer with information about the individual using the behaviour. Behaviours which could be included in this category were for example, eye gaze, pointing, proximity to another, calling out, physical contact, or stereotypic/self regulatory behaviours which are sometimes described as behaviour used to control or calm oneself (Donnellan et al., 1984).

Recent research suggests that there may well be reasons for individuals to use specific behaviours which, while they are not necessarily interactive, serve a communication function (Anderson et al., 1992; Grandin, 1992). Individuals who have some communicative competence have noted themselves how particular stimuli would evoke specific responses that conveyed emotions from grief to frustration (Cesaroni & Garber, 1991). Thus, while not necessarily intended as communicative, these behaviours do convey information and as a consequence, are given meaning by others (Kaiser & Goetz, 1993). Self regulatory or self
stimulatory behaviours must therefore be included within the category of communication opportunities.

In order to code observations as "communication opportunities" it was necessary for the observer to identify specific behaviours in the presence of a potential communication partner. Although behaviour could be intended to involve some other person or to convey some information, a communicative behaviour did not have to gain the attention of another in order for it to be scored as a communication opportunity. Examples of communicative behaviours that would be scored as communication opportunities were: an individual who suddenly smiled and laughed in a music session; a person who looked up and smiled at another person; an individual who held up a cup to another; a person who had been sitting in a group who suddenly slapped the table.

**Response (R)** was described as speech or behaviour which was used to make some response to a "communication opportunity". For instance, "Is there something you want?" would constitute a response to the communication opportunity created by an individual slapping a table. Responses could only occur if they related specifically to a communication opportunity or preceding response from the other person or people in the interaction. Having to repeat a request for instance was a fresh communication opportunity as was a change to the substance of the interaction. For example, an individual who while sitting at a table bangs her or his hand down on the table creates a communication opportunity. A staff person nearby who then says, "It's time for swimming," to nobody in particular has created a new communication opportunity.

**Interactions** began with a communication opportunity and were maintained by responses that related to the original interaction. The length of an interaction was measured by the number of **turns** taken by each participant in the interaction (communication opportunity and subsequent responses).

An **encourager (E)** (Kuder & Bryen, 1991) was an initiation or response made by a staff member which required further input from
the listener or initial communicator. A statement was encouraging if it was conversational, informative and supportive of communication development or if it indicated interest in the individual and their message. This included requests requiring a verbal or non verbal response and social exchanges that prolonged or extended an interaction. For instance comments such as, “Good morning, how are you?”, “Do you think we might need to add some milk to this?” would all be encouraging statements.

A discourager (D) (Kuder & Bryen, 1991) was described as an initiation or response by staff that reduced the likelihood of a conversational interaction or a further response or did not require any response. This included direct orders, stock phrases, simple reinforcement or reactions which indicated a lack of interest in the activity or initial comment. Discouragers included phrases such as, “Put it here”, “Good”, “Mm”.

Initial usage of the encouraging and discouraging codes demonstrated that it was entirely possible for the message (content) to be encouraging but for the method of delivery or situation, to be discouraging (context). An example of this would be a situation in which a staff person says, "Here are some biscuits, would you like one?" as he or she puts one of the selection on to a plate. While the content of the message implies choice and gives the opportunity for an interaction to occur, the context eliminates that chance. As the environment was seen as being an essential support for communication, the dominant condition (context) would have been recorded.

A data collection sheet was designed providing space for running records alongside three columns. The first column provided space for the coding of communication opportunities and responses. Whether staff statements were encouraging or discouraging was recorded in the second column. The length of interactions that occurred was marked in the third column along with the number of turns taken in each interaction (see Appendix 1 for a completed example).
Environmental Checklist

The environment plays a significant role in the support of an individual's attempts at communication (Rowland & Schweigert, 1993). Information as to the nature of the social "prosthetics", the physical layout or the opportunities generally available for communication in the social and physical environment were not available from the running records and coded observations which focused specifically on one individual and the others with whom they came in contact. In addition to the running records and coded observation categories therefore, some strategy was necessary to enable the collection of information about the environmental supports available that could affect the quality of communication between Dean, Glenn, Helen and Vivienne and their communication partners. A review of the available literature was completed and from this a checklist of those environmental attributes that supported communication was designed.

There have been few studies conducted to address the effects of environmental stimulation on the ability of people with the most severe disabilities to participate in communicative exchanges (Richards & Sternberg, 1992). Those that have been completed with children with disabilities have noted the high correlation between increased language skills and the opportunities available to rehearse language or to engage in communicative acts (Hile & Walbran, 1991; Houghton et al., 1987; Ostrosky & Kaiser, 1991; Peck, 1985). Ostrosky and Kaiser, (1991, p. 6) noted that:

Both social and physical aspects of the environment set the occasion for communication. The physical environment includes the selection and arrangement of materials, the arrangement of the seating to encourage engagement and scheduling of activities to enhance participation and appropriate behaviour. The social environment includes the presence of responsive (listeners) and (peers) and the verbal and non verbal social interactions that occur among the people in the environment.

Best practice in the field of language and communication support and intervention with people with disabilities often advocates a "natural environment" or "milieu approach" (Rowland & Schweigert, 1993) which emphasises the use of natural communication routines within the context of daily activities. Typically children develop language and communication skills as a result of their interactions with others.
(Rogoff, 1990) and from opportunities to make choices and to express preferences. These same experiences and repeated opportunities in which to rehearse skills (Kennedy et al., 1990) are obviously essential for the development of communication in people with the most severe disabilities.

In reality, daily activities for people with severe disabilities vary greatly in their ability to stimulate communication (Rowland & Schweigert, 1993). Studies of the social performance of individuals with intellectual disability and autism suggest that low levels of language production may be associated with the relative absence of certain types of interaction opportunities (Halle et al., 1984; Haring et al., 1987; Peck, 1985), and that those opportunities that are available may be highly structured or controlling. As a consequence of this, some activities in which people with severe disabilities engage, may actually mitigate against the development of communication skills.

Orlansky described typical classroom environments for students with severe handicaps and concluded that these environments were "over programmed", provided too few opportunities for interaction, and were too controlling of students. Guess and Siegel-Causey (1985) identified many of the same problems. In addition, these authors noted the critical instructional emphasis in these classrooms of strong adult stimulus and reinforcement control over student behaviour. (Peck, 1985, p. 183).

When people do not have the opportunity to make informed choices, to engage in decision-making and to act on their own behalf (Wehmeyer & Metzler, 1995), concepts of self esteem and self worth fail to develop (Lindsey, 1994). Of particular importance to people with severe disabilities are the issues of passivity and learned helplessness (Reichle et al., 1989) which arise as a result of the lack of these opportunities. Traditionally, choice and decision-making skills have been taught with the use of procedures such as incidental teaching, mand-model, time delay and interrupted behaviour chaining (Haring et al., 1987). However, what these strategies tend to focus on is requesting behaviours alone. While there is real value in having requests easily understood, they are but one part of our communication needs. The bulk of the communication in which people engage is related to social interaction and information sharing (Chadsey-Rusch & Gonzalez, 1988). Therefore, in addition to the provision of opportunities for people with
communication difficulties to make requests, environmental assessment must be able to determine the availability of support for general decision-making and the expression of preferences and social interaction. Of the typical population Sands and Kozleski, (1994, p. 6) noted that:

Although such social demographics as socio-economic status, race, ethnicity, gender, marital status, age and education have all been shown to impact independence, the ability to form and maintain relationships and the accessibility to others who are willing to involve themselves in relationships appear more crucial.

Clearly, communicative ability is crucial to social interaction (Brinton & Fujiki, 1993). In their study, Brinton and Fujiki (1993) found that people with intellectual disabilities were most reticent in engaging in communication with others. As was noted previously in relation to decision making, the development of skills with which to interact, opportunities for rehearsal and the confidence to use those skills are clearly much needed developmental requirements for people with severe disabilities and need therefore to be available in any environment in which people are present.

Many people with severe disabilities lead lives that are socially isolated (Krauss et al., 1992a) and devoid of significant social relationships (Wenz-Gross & Siperstein, 1997). The size of an individual's world and the opportunities available to people to grow mentally, emotionally, spiritually and physically (Wilson, 1997) are determined by the friendships and relationships available to him/her (Grenot-Scheyer, 1994; Guralnick, 1997; Rogoff, 1990). Similarly people learn about participating with others, making decisions and taking responsibility in the act of doing so and with the support of others (Vygotsky, 1978). The role that the physical and social environment plays in the facilitation of communication is a complex interplay of large numbers of variables (Richards & Sternberg, 1992). Social and physical environments that provide stimulation and opportunities for people with severe disabilities to engage in multiple acts of communication to meet numbers of ends are therefore essential elements in the development of the skills necessary for communication (Ostrosky & Kaiser, 1991).
Of those attributes in the physical environment which support communication there is consensus in the literature regarding the importance of the role of activities. They need to be perceived as highly motivating, available on a regular basis and capable of creating opportunities for requests for support and interaction with others (Halle et al., 1984; Kennedy et al., 1990; Ostrosky & Kaiser, 1991; Rowland & Schweigert, 1993). Further, activities must include multiple and/or novel components which allow the individual in question to initiate and control aspects of the activity in which they are engaged (Peck, 1985; Rowland & Schweigert, 1993).

The social environmental attributes that are supportive of communication include the availability of communication partners (Richards & Sternberg, 1992), and the opportunity for partners to create opportunities for communication, for them to expect responses (Halle et al., 1984; Kennedy et al., 1990; Rowland & Schweigert, 1993), and for partners to provide encouragement and support (Lindsey, 1994). The opportunity for people to engage in purely social interactions with their peers and caregivers is also regarded as critical (Beukelman & Mirenda, 1992; Butterfield & Arthur, 1995; Chadsey-Rusch & Gonzalez, 1988).

Using the available research on the environmental supports important to communication, a checklist was compiled to determine how supportive the environment was to the communication of Dean, Glenn, Helen and Vivienne in the segregated settings in which they lived and worked. The main areas of interest drawn from the literature concerned the availability and type of stimuli present in the environment, the role of staff and peers in the creation and development of communication, the types of communication supports available and the physical location of people with respect to potential communication partners. This checklist was then trialled in both the residential and vocational settings.

Subsequent to trialling, a number of items were altered to better reflect aspects of the environments under observation. Other items were deleted from the checklist. For example, research studies (eg. Rowland & Schweigert, 1993) had stressed the importance of the availability of peers who did not experience communication difficulties and who could
act as language/communication models. While there can be no doubt that this is an important element for successful language/communication development, the reality was different for the people in this study. All of the participants lived and worked in segregated settings with other people with severe disabilities. Very few of Dean, Glenn, Helen and Vivienne's peers spoke with ease, and the only people without any communication difficulties who were available in these settings, were staff. While this was contrary to the concept of inclusion and needed to change, the focus of the checklist was to understand the way that the environment in which Dean, Glenn, Helen and Vivienne were already living affected their communication. The inclusion of an item requiring the presence of peers without communication difficulties would never yield any information. Conversely, there would be people in the environment who used a variety of communication strategies, including speech. There was therefore potential for a checklist item concerned with the availability of people with a range of communication skills to affect the communication environment, hence its inclusion.

Subsequent to further trialling, the final checklist included the following categories: the activities and stimuli available to service users; the relationships that existed between staff and service users; the relationships between service-users; the availability of communication systems and the location of service users in the physical environment (see Appendix 2).

**Length of Observations**

To make any interpretation of the communicative behaviour of others it is essential to ensure that "snapshots" or observations are of sufficient length to ensure that a clear picture is gained of the interactions in which a person engages. Similarly, for observers to reach the point at which they have a clear picture of the communicative skills and difficulties which an individual experiences, a certain number of observations will need to have been completed. This section reviews the literature covering the optimum length of observations and the most appropriate number of observations to complete prior to making
an interpretation of the communicative skills of people with severe disabilities.

Among the studies previously noted (e.g., Houghton et al., 1987; Felce et al., 1986; Kuder & Bryen, 1991) there is a wide diversity of observation period. Felce et al., (1986) videotaped their research participants over one three-hour period. Kuder & Bryen, (1991) observed their participants in both classroom and residential settings for 15 minutes each over 20 visits. Houghton et al., (1987) observed students for two three-minute blocks (with a 10-second rest each minute) per day for an unspecified number of days. Of particular note Kuder and Bryen (1991, p. 328) stated that:

Observational times were varied intentionally so that a representative sample of residents' daily activities could be observed. Observations were conducted for continuous periods of 15 minutes. We found that continuous rather than interval observation was best for our purposes since this gives a better picture of the pattern of conversational interaction.

In the literature reviewed there was considerable support for the use of momentary time samples for observations which were taken over fairly restricted periods of time (Walbran & Hile, 1988). As this study was concerned with understanding the act of communication in social contexts, a momentary time sample was of little assistance. The length of observation was critical to accumulate data on the actual interactions which took place and to develop an understanding of the variables supporting those interactions.

Over the 15 minutes of their observations, Kuder and Bryen (1991) collected data to identify when interactions were initiated, whether those initiations were encouraging or discouraging and whether a response was made or not. The observations for this study involved observers taking running records of all of the behaviours and events and interactions which occurred around a target individual. Subsequent to the completion of an observation, coding of those specific behaviours described previously had to be completed. In this study a balance had to be achieved between ensuring that observations were long enough to record any communication interactions which occurred while not being so long as to overwhelm observers or to affect the quality of the information collected, through observer drift for instance.
Initial data collection had shown that interactions were typically infrequent and relatively short. Sometimes however, interactions were observed to continue over a number of minutes. In those observations in which there were few interactions, inter-rater reliability could be maintained over long periods of time. However, in situations where recording needs were greater, a lesser period of observational time was required for observers to record information and maintain their attention to the observation. An observation period of 10 minutes was arrived at. In analysing the running records which were completed during initial data collection, a representative sample from any events taking place could be gathered over 10 minutes and no interactions had exceeded this length of time. In addition, inter-observer agreement was maintained at a satisfactory level over this period.

To ensure that there were sufficient and varied data to enable the completion of communication profiles, observations of Dean, Glenn, Helen and Vivienne were timetabled throughout the day over a period of 10 months. In the first phase of the study and where possible, one observation was completed for each ten minutes in every half hour of that person's day between 7:30am and 7:30pm over a seven day period in their residential setting and over the four days they attended the vocational setting. In phases two and three, observations were less frequent and were recorded for 10 minutes in each hour of an individual's day.

The reduction in observation during phases two and three occurred as a result of the change in focus of the observations. During phase one (see Figure 6.1) of the study, observations were used to develop communication profiles as well as providing information about the frequency and duration of interactions. Any changes to individuals' patterns of participation and interaction in phases two and three were important, therefore running records continued to be taken. However, the focus of observation during these phases was the extent to which the staff training and the introduction of augmentative strategies affected the communication process. This being the case, the detailed contextual information collected during phase one of the study was no longer necessary.
Training Observers to Collect Running Records, to Code Observations and to use the Environmental Checklist

Three observers completed the observations for the study. Two observers were research assistants employed for the study duration, and the third was the researcher.

All of the observers undertook eight training sessions over four weeks in taking running records and in completing the coded observations and environmental checklists. This training included discussion of the observation technique and the codes to be used. Initial discussion focused specifically on the detail that was required in completing running records. The observers had to make a running record of all of the behaviours of the target individuals and the speech and behaviour of anybody with whom Dean, Glenn, Helen or Vivienne interacted during observations. They also had to capture the content and the tone of any speech that was directed at the target individuals but they did not have to make verbatim recordings of that speech. After running records had been completed, observers were also required to make field notes of any events or issues that would not be included in the running record but which might be relevant to that record.

With respect to the coding of observations, discussions took place as to the definitions of each code and how each code should be applied to specific pieces of observational data. Discussions about the filling out of the environmental checklist followed the same pattern.

In the third to sixth training sessions, 10 observations were completed using video footage of people interacting with others who had severe disabilities. At the completion of these sessions, discussions took place during which the observations were compared and strategies for the efficient collection of running records, coded observational data and the environmental checklists were discussed.

The seventh and eighth training sessions involved one of the observers and the researcher visiting the settings in which observations were to take place (one visit to each setting for each observer). One trial
observation was undertaken of each of the four disabled participants at each visit. Discussion and feedback on the quality of the observations and the use of codings and the environmental checklist followed the observations. At these times, comparisons were made as to the information contained in each set of running records.

Over the course of the study, the researcher and the observers met every three weeks to discuss the observation techniques and coding. Any variations in recording over the preceding three weeks which arose from reliability checks were raised and discussed at these times. On occasion, trial observations were repeated using video-tape to ensure consistency of results across the observers. The multi-disciplinary team also met on a monthly basis. At these meetings reports were given on the progress of the study and any specific difficulties which were being experienced with respect to the observational strategies in use. Ways to overcome these difficulties were suggested and later implemented by the observers to maintain the quality of the observations taken.

**Completing running records, coded observations and environmental checklists.**

Three observers individually visited the vocational and residential settings at pre arranged times. Visits were organised to ensure that the observations were collected at regular intervals over the hours of a person's day. If an individual observation was not able to be completed for any reason a further observation was completed where possible.

Observations began in the vocational centre. Dean, Glenn, Helen and Vivienne all attended the centre on four out of five days per week between 9:00am and 3:00-3:30pm. On staggered days each person spent the fifth day in the residential setting engaged in one-to-one domestic and learning tasks.

One month later observations began in the residential setting. Observations in the residential setting covered the home day, before and after attending the vocational centre on the other four days, the weekends and any holiday periods that occurred over the course of the study. Observations took place only in the public areas of the house
from 7:30am to 7:30pm and therefore did not include any instances of personal care. Early in the study it became apparent that observing individuals into the evening was highly intrusive in this traditionally quiet time, hence the finishing time of observations. At other times, if individuals removed themselves to their bedrooms it was assumed that they wished to be alone. Where possible, observations due to be completed at these times were rescheduled. Observations were not taken when individuals were travelling to or from the vocational setting. The vans that were used to transport people took numbers of people to other vocational settings so travelling time could amount to up to 2 hours per day. When an observer visited either setting, observations centred on the participants present at that time. Depending on the day of the week, observations began with different people and followed a prescribed order.

Observers established working relationships with all clients and staff in the residential and vocational setting. Each time an observation was to be completed, observers spent a little time interacting with those present in the setting. This relatively informal approach helped to reduce any anxiety on the part of the participants. Subsequent to social exchanges, observers completed observations centred on the individuals with disabilities.

Each set of running records was completed on a standard recording sheet (see Appendix 1) which included columns for the code which was designed to identify specific behaviours used by either staff or the disabled participants. Observers recorded all of the behaviour of the target individual and any behaviour or language used by any other individual who interacted with that person over a 10-minute period. In addition, any events that appeared to capture the interest of the target individual were noted. Observers placed themselves at a distance from the target individual where they could observe easily. They also followed individuals discreetly if they moved from one location to another.

Immediately after completing each running record the observers completed the environmental checklist. They used a standard environmental checklist (see Appendix 2) designed to identify the
supports for communication available to individuals from the social and physical environment. Observers marked an item on the list if they had seen evidence of that particular item in relation to the individual they had been observing in the preceding 10 minute observation. If, for instance, an "activity" (one of the checklist items) had been available to a group of people during the preceding observation, but the person they were observing was not included, that item could not be checked. Conversely, if they had been invited to join the group, whether they did so or not, the item would be checked as available. At the end of the checklist, observers were asked to note anything of interest happening in the environment which could affect the checklist or the preceding observation. They were also asked to draw a plan of the location of individuals in the environment at the time of the observation. To complete the checklist, observers remained where they had stationed themselves while taking the running records.

Coding of specific behaviours which were extracted from the running records was completed after all of the observations timetabled for a specific visit had been finished. Frequently this happened off the site in which the observations had been completed. Observers would take time to study the running records completed in an observation and on this basis they would identify specific incidents of communication opportunities and responses. At this time, they would also identify the staff's behaviours that were encouraging or not and they would count the length of interactions.

**Interviews**

Understanding the communication that takes place between people with and without severe disabilities is central to the assessment of the skills possessed by individuals with communication difficulties. This understanding is also critical when trying to create change. If a person without a communication difficulty does not recognise the communicative behaviour of another then communication cannot take place (Butterfield & Arthur, 1995). Similarly, if a communication partner believes that as a result of severe disability, individuals will not communicate (Ferguson, 1994), then they are not likely to attempt to establish interactions with such people. To this end, the beliefs of
people about those with severe disabilities are an essential element to the understanding of the communication that takes place between them. The degree of influence of communication partners on the communication process is therefore significant and as noted, had become apparent during initial data collection.

An understanding of the attitudes and beliefs which staff held about their work, the people with whom they worked and the priorities that they had for Dean, Glenn, Helen and Vivienne were the foci of interviews with staff. Attitudes that people hold towards others will inevitably guide their actions (Malouf & Schiller, 1995). To be able to explain the actions of staff towards Dean, Glenn, Helen and Vivienne as recorded in running records, the coded observations and environmental checklist, it was necessary to have an understanding of the way that staff constructed the four disabled participants as communicators.

In respect of communication in particular, positive attitudes by staff have been noted to result in many more sociable interactions with people with disabilities (Markova et al., 1992; Shafer et al., 1989). In addition, there is clear evidence that attitudes toward people with disabilities are enhanced when people have received training in the field (Tanner, Wilton, & Glynn, 1991). Staff training was to take place subsequent to data collection in phase one. Without an understanding of the attitudes that drove staff to behave in the ways that they did, it would have been difficult to organise training to address the sets of beliefs held by staff.

The running records, coded observations, environmental checklist and supplementary field notes helped to create the picture of Dean, Glenn, Helen and Vivienne in the context of their social worlds. To complete that picture, it was important to understand how staff perceived the skills and abilities of the four disabled participants and their own role in the development of those skills and abilities. The addition of interview data was designed to enhance the picture of each individual's life within the context of a variety of situations (Lord & Pedlar, 1991) and from a number of perspectives.
Development of the interview schedules.

The predominant view held about people with severe disabilities is negative (Henry et al., 1996; Rees et al., 1991). People with intellectual disabilities are regarded as remaining in a childlike state (Heyman & Huckle, 1995), of being incapable (Reichle et al., 1989) and of being unpredictable in their behaviour (Wagner, 1991). It is highly likely that these negative feelings influence our practices in respect of these people (Bennett et al., 1994).

One of the aims of the study was to understand and change the ways in which people interacted with Dean, Glenn, Helen and Vivienne. It was essential therefore, to understand the beliefs behind the actions of staff. The interview schedule was developed on the basis of a number of issues which were identified as relevant in the literature. Firstly, staff with more professional backgrounds tended to have more liberal attitudes towards people with disabilities (Murray & Minnes, 1994), and those who are more comfortable with people with disabilities identify significantly higher social and vocational competence in those people than do those who are not so comfortable (Shafer et al., 1989). For people with severe disabilities then, there are clear benefits in having well trained and positive support from those who work for them.

Second, interaction between disabled and non-disabled people has a positive effect on both parties (Rowland & Schweigert, 1993). For people with significant communication difficulties, the benefits of interacting with those without communication impairments are even more profound (Beukelman & Mirenda, 1992). Access to the typical community in both a physical and a social sense is therefore essential. If however, the views of those who work with people with severe disabilities are such that they believe that severe disability implies a lack of understanding or a requirement of a great deal of support (Rees et al., 1991) then the activities which staff prepare for their clients will likely reflect that belief. A number of studies have noted for instance, that staff involve their clients in community activities more to keep them active, than to enhance their integration (Lord & Pedlar, 1991; Markova et al., 1992). If staff do not believe that there is anything to be gained by the inclusion of people with severe disabilities then they
are likely to consider physical presence (Polloway et al., 1996) sufficient rather than facilitating actual interaction. The ramification of these behaviours is significant with regard to communication.

Choice making is a significant communicative activity and constituted an important area of inquiry in the interview. It has been frequently denied people who have lived in institutional settings. Staff in such settings have reported that many people did not know what it meant to make a choice (Lord & Pedlar, 1991). It can be assumed that few opportunities for such activities occur for people about whom such perceptions are held. Questions about the ability of individuals to make choices, as perceived by staff, therefore constitute a major area of inquiry given the paucity of opportunity granted many people with communication difficulties (Markova et al., 1992).

Central to the development of the interview schedule was the need for an analysis of what staff understood by the term communication and how communication related to the things that they did. Did they for instance, see that behaviour communicated information (Baumgart et al., 1990), that participation in activities provided opportunities for communication to take place (Kennedy et al., 1990; Ostrosky & Kaiser, 1991) or that choice making skills were important in a communicative (Shevin & Klein, 1984) as well as a functional sense? Although there has been more of a focus on "lifestyle support" (Newton et al., 1995) for people with disabilities in recent years, the literature has continued to report a focus on the development of independent living skills and the amelioration of problem behaviours in people with intellectual disabilities (Clark et al., 1991). This has inevitably meant that choice making or responding to requests has received more attention in practice than the development of social interaction skills. Whether staff perceived that Dean, Glenn, Helen or Vivienne used their behaviour for communication and how they interpreted that behaviour therefore constituted significant issues (Clark et al., 1991).

It is important to address the issue of whether the questions asked in an interview achieve the desired ends, especially when the beliefs and perceptions of one group about another are being discussed. The social context in which action occurs shapes and reshapes our beliefs and
attitudes. An action or behaviour that provokes a specific response in one situation will not necessarily evoke the same response at another time and in another place (Bennett et al., 1994). Attitudes are not fixed entities, yet interview questions are frequently framed as if they are (Soder, 1990). In interview situations it is important to gain insight as to why people do as they do and what guides their practice. To achieve this, the creation of hypothetical, but typical situations about which people are asked to comment creates a safe opportunity for people to illustrate how their subjective beliefs guide their practice in familiar social environments (Antonak, 1994; Soder, 1990).

Interview schedules (Maykut & Morehouse, 1994) which were developed from an analysis of the available literature were used to pose the same questions to each staff member. Staff were asked to describe the background experiences and training which had led them into their field of work. They were also asked to discuss their role as they saw it, in respect of the support they provided to Dean, Glenn, Helen and Vivienne and how they were involved in the setting of priorities for them. The rest of the interview focused on questions of communication, community integration and participation with others and what priorities the staff had for each of the four disabled participants. Subsequent to this, staff were asked to make comment on four common events involving either Dean, Glenn, Helen or Vivienne. These included supermarket shopping, playing a game or participating in activities. On request, staff put themselves in the position of a "good staff person", that is, an idealised version of a staff person working with the clients they served. Staff were then asked to discuss the priorities that this "good staff person" would have for each individual in the scenarios (see Appendix 3).

Interviews were completed with all of the participating staff in this study. These were intended to complement the data available from running records, coded observations, the environmental checklist and supplementary field notes in that they provided insight into those actions and behaviours that staff were observed to use in the course of those observations. In addition, interviews provided valuable material on which to base part of the training offered to staff at the beginning of phase two of this study. If this training was to be successful, it was
necessary to determine the staff's skills in working with people with severe disabilities. Central to this was an analysis of why staff did the things they did and what system of beliefs drove those understandings.

**Training for Interviewers**

Subsequent to the development of the interview guides, the researcher and one of the observers met on one occasion to complete one pilot interview each with a work colleague using the guides developed for the vocational and residential settings (see Appendix 3). Interviews were completed in the presence of the other observer who acted as the interviewee and an independent observer who took notes concerning any deviations from the protocol, differences between interviewers, and difficulties with the interview itself. These training interviews were audio-taped.

After the first training interviews, the interviewers listened to the tapes and discussed variations in style. At this time, feedback from the independent observer and interviewee was also sought.

**Conduct of the interviews.**

Staff in both the vocational and the residential setting were interviewed during phase one of the data collection. Individual, semi-structured interviews (see Appendix 3) took up to one hour and were conducted in the workplace with staff during non-contact time. Interviews were conducted either by the researcher or by one of the observers who had been employed for the duration of the study. All of the interviews were audio-taped and later transcribed for analysis.

At the time of the interview, staff were asked not to discuss the content of the interview with their workmates until all of the interviews had been completed. They were also informed that the information they gave was confidential to them and the interviewer and researcher. It was also explained that staff would later be provided with a written transcript of the interview which they would be asked to read and to amend if they wished. Subsequent to any alterations to the transcripts, interview participants were provided with another copy to view, to
alter and to keep should they wish. Any changes made to the transcripts at that time were incorporated and the finished copies returned to the interviewee.

Using the interview schedule, the interviewers asked each question in the order in which it appeared on the schedule. Apart from making short comments or using body language to encourage the staff member being interviewed, they did not make further comment. On occasion people being interviewed were not clear about one of the questions being asked. These difficulties appeared to arise for one of two reasons: first, that the question involved an area of the operation of the service about which the person being interviewed was unfamiliar, or second, that the language used in the question was not familiar to the person being interviewed. On inquiry, the interviewer would ascertain which of the two problems had occurred. In the case of the first option they would move on the next question and in the second could reframe the question using simpler language but they could not give examples to illustrate what was required. If reframing did not assist in ensuring understanding, the interviewer moved on to the next question.

At the completion of each interview, the interviewer thanked the participant and explained the procedure for the returning of transcripts and the rights that the person interviewed had in respect of alteration and modification of their transcripts.

**Inter-Observer Agreement**

In a qualitative study in which data are collected by more than one observer, the agreement that is achieved between observers for observations and the recordings of those observations gives the researcher and the reader confidence that what was seen and heard occurred to the extent and in the way described. In this case, the compatibility of information gathered is equivalent to the kind of inter-observer calculation undertaken for quantitative data. Both generate evidence that the data reflects what occurred in these environments.
In the case of this study, running records, coded observations, the environmental checklists and supplementary field notes were collected by three observers. The interviews were conducted by the researcher and one of the observers. The depth and intensity of the information collected by more than one person about four people in two distinct settings lends credibility to the results presented and to the judgements that have been made about the communication skills of Dean, Glenn, Helen and Vivienne and about the environments in which they lived and worked. The observers also discussed what was happening in each of the settings to each of the participants on numerous occasions during the study. We all got to know the people we were observing, we spent time with them and in the case of the staff, we talked with them. As a result of these interactions with each other and with the participants, we became confident of the authenticity and consistency of the accounts we had prepared and of the interpretations we had made.

Inter-observer agreement in the behavioural framework is seen as a reliability statement based on the percentage numerical calculation of interval or event recording of coded categories. Reliability checks provide an indication that in their other observations all observers, using the observational definitions of communicative and interactive behaviour, were generating data that was replicable across occasions, settings and participants.

In a 10 minute period, running records were undertaken of all of the behaviours of the disabled participants under observation as well as all of the behaviours of anybody else who came into contact with them. Specific behaviours emerging from the running records were then coded according to the operational definitions of those behaviours. Subsequent to the completion of each running record, the environmental checklist was also completed. During reliability checks on 20% of the observations, two of the observers visited a setting and completed observations of the same individuals at the same time. They would then complete environmental checklists and at a later time, code the running records. Reliability was determined for the coding by dividing the number of agreements of coding from observations completed at the same time by the highest number of entries recorded by the two observers and multiplying by 100 (Church, 1997) (see Table...
6.1 for results). Omissions (where one recorder has included a coded behaviour and the other has not) have been treated as errors.

<table>
<thead>
<tr>
<th></th>
<th>Communication Opportunity</th>
<th>Response</th>
<th>Interaction Length</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dean</strong></td>
<td>69%</td>
<td>79%</td>
<td>77%</td>
</tr>
<tr>
<td><strong>Glenn</strong></td>
<td>60%</td>
<td>74%</td>
<td>73%</td>
</tr>
<tr>
<td><strong>Helen</strong></td>
<td>71%</td>
<td>75%</td>
<td>85%</td>
</tr>
<tr>
<td><strong>Vivienne</strong></td>
<td>72%</td>
<td>81%</td>
<td>83%</td>
</tr>
<tr>
<td><strong>Average Agreement</strong></td>
<td><strong>69.7%</strong></td>
<td><strong>77.7%</strong></td>
<td><strong>80.5%</strong></td>
</tr>
</tbody>
</table>

Average inter-observer agreement over the three codes was 75.9%.

Inter-observer checks of the environmental checklist were also completed for 20% of the checklists completed. The total number of agreements of the items checked on the checklist was divided by the highest number of items checked by the two observers, multiplied by 100. Agreement for the environmental checklist was calculated at 78%.

In the normal course, an upper limit of 80% to 85% (Johnson & Bolstad, 1973) is realistic for the coding used in most studies of social interaction. The inter-observer agreement found in this study is comparable with similar studies (e.g., Bray, 1988).

The running records described the behaviour of target individuals and all of those who came into contact with them. Although all observers had received training in undertaking running records, they were each likely to bring slightly different perspectives to the work they did. The use of different words or their sensitivity to different aspects of what they saw (Eisner, 1991) could easily affect the coding that they applied subsequent to the observation. Therefore, it would be unrealistic to assume that the running records which observers completed should be identical. With respect to the environmental checklist, the observers were required to make subjective judgements about behaviours which could be described as "respectful", or about activities being "appropriate". Again, absolute agreement is highly unlikely.
Observations ran for 10 minute periods in this study. On numbers of occasions, a high level of reliability was achieved as a result of there being little interaction between Dean, Glenn, Helen, Vivienne and others in their environments. At other times, observers had to record a great deal of information over a short period of time while continuously watching what was happening. Under these circumstances, there was a high potential for information to be omitted or for behaviours to be recorded out of their order of occurrence. Many of the behaviours that Dean, Glenn, Helen and Vivienne used were subtle and likely to be seen differently within the context of a chain of behaviour. Agreement was achieved for 75.9% of the coded observations and 78% of the environmental checklist data. It is difficult to complete observations in natural settings, particularly when detailed running records are used. Problems also arise when making subjective judgements about the quality of the settings in which people live and work. On this basis, it is argued that the agreement levels reached are adequate and acceptable for this type of data collection and the conclusions drawn.

**Validity of the Data and Procedures**

In qualitative research data is collected in complex natural contexts (Chadsey-Rusch & Gonzalez, 1988). This being the case researchers may gather different data under different circumstances. While this is an important element of qualitative research, the potential for differences in the findings that people might achieve from similar or the same settings requires that the validity of those findings be addressed.

Validity can be defined as:

> The degree that a method investigates what it intended to investigate, to the extent to which our observations indeed reflect the phenomena or variables of interest to us.  
> (Kvale, 1996, p. 240)

In the context of the present study, communication has been described as being about social transaction, the exchange of information, relationships and self-determination. It could be argued that the strategies used in the study are valid to the extent that they reflect, tap
into, and illustrate the various dimensions of communication from these perspectives.

Eisner (1991) has described validity as the process of making judgements about the soundness of a proposition or finding. He makes the point however, that there is nothing certain in the judgements that we make but that they are based on the evidence available to support them. To this end he describes the three strategies for determining the validity of information as structural corroboration, consensual validation and referential adequacy.

Structural corroboration is achieved in the ways in which multiple types of data are related to each other and support or contradict the interpretation and evaluation of a particular finding. Structural corroboration has been described as being similar to triangulation (Stainback & Stainback, 1984) about which Eisner, (1991, p. 110) noted that:

...we seek a confluence of evidence that breeds credibility; that allows us to feel confident about our observations, interpretations and conclusions.

The aim of structural corroboration is to identify recurrent behaviours, actions or themes from a range of data that has been collected in different ways. The features of a particular situation which emerge from those different data collection strategies are then combined and interpreted in ways that are credible. Kvale (1996) addresses the issue of credibility from the perspective of validity as quality of craftsmanship. He describes validation as checking, as looking for representativeness, researcher effects and triangulating. He also notes the value of trying to replicate a finding and in getting feedback from informants.

In the present study three observers collected running records, coded observations and the environmental checklists, and two interviewers gathered material from all of the staff working with the disabled participants. In effect, the study was completed in two distinct settings, it utilised multiple methods of collecting data, and feedback was sought from those involved in the study regarding the interviews they
completed and the results that were derived from the data collection strategies used.

The second method of achieving validity defined by Eisner (1991) is the use of consensual validation or weighing the evidence (Kvale, 1996). He defines this as agreement between competent others that the descriptions, interpretations and the evaluations made in a particular study are the right ones. In this respect he argues that consensual validation can occur both in terms of the description of a particular setting or event and in the interpretation of that event. He makes the point that although consensual validation can be achieved as a result of structural corroboration, it is also secured as a result of more than one researcher completing a study. Kvale (1996, p. 245) defines this strategy as communicative validity, in which:

Valid knowledge claims are established in a discourse through which the results of a study come to be viewed as sufficiently trustworthy for other investigators to rely upon in their work.

This is substantially similar to the investigator triangulation discussed by Stainback and Stainback, (1984). Investigator triangulation, (or communicative validity or consensual validation) can be achieved by involving the participants in a particular study, the general public or the scientific community possessing methodological and theoretical knowledge in the specific area. In this study, staff were interviewed for their understandings about communication and the disabled participants before training occurred. After staff training had been completed, the vocational staff were interviewed for their feedback and facilitated discussions were held with the residential staff. The results of this study were also reviewed by one of the participants in the study and they were discussed on a regular basis with a multi-disciplinary team with specialist knowledge in the area of educational research, severe intellectual disability, communication and occupational therapy.

Eisner's (1991, p. 114) final technique for establishing the validity of a study is its referential adequacy:

...work is referentially adequate when readers are able to see what they would have missed without the critic's observations.
Kvale described the process as pragmatic validity. He makes the point however, that it is possible to discern two types of pragmatic validation, first, whether a knowledge statement is accompanied by action, or whether it instigates action. This study was concerned with providing some training for the staff working with Dean, Glenn, Helen and Vivienne on the basis of the findings from the first phase of the study. To the extent that change can be argued to have occurred as a result of the study, pragmatic validation or referential adequacy could also be said to have been achieved.

Assessment of Change

In the present study, the behaviour of four people with severe disabilities was observed in two settings. As well, interventions in the form of staff training and the introduction of augmentative communication strategies was undertaken. Therefore some assessment needed to be made of any change arising from those interventions.

One of the main points on which this study is based is the contention that communication is a complex social transaction that is dependent for its success on a large number of social, emotional and physical variables. Observation of communication in the environment in which it naturally occurs provides the data for the interpretation of the communication strategies and skills used by the four people with severe disabilities in this study. One possibility for assessing an intervention effect would have been a multiple baseline across subjects design. This would have involved the intervention used, namely staff training, being staggered across each of the participants in both of the settings. This was not undertaken for the study. A particular concern was that such an approach would change the relationships of those involved in the study. That is, an artificial manipulation of all participants would have been necessary, and this would have changed the communication context for everyone.

As well as being about information transfer, communication is also about membership and relationships. If we are suggesting that a relationship with an individual is central to the development of
communication with that person, then we cannot expect the staff working with any of the disabled participants to change their own behaviour and to manipulate the environment in such a way as to be able to satisfy the demands of an experimental design. If we want staff to interact with people with severe disabilities on an equitable basis then we cannot impose an experimental framework on those relationships and expect them to remain unaffected by the manipulative thought and practice involved in experimentation.

As an alternative, in making a case that change in communication following intervention occurred as a result of intervention, the present study relied on delayed intervention across two settings and on extensive data that challenged the plausibility of competing hypotheses. The interventions were identical in both settings but occurred one month apart. Data continued to be taken subsequent to the intervention in each setting. If changes in communication in each setting occurred only subsequent to intervention, then it could reasonably be argued that the change was most likely the outcome of the intervention. In addition, the observation methods used in this study were designed to provide extensive assessment information about Dean, Glenn, Helen and Vivienne. In the first phase of the study, 17 hours of data were collected over five months on each disabled participant. In the subsequent phases eight hours of data were collected over the following five months. Detailed running records formed the basis on which this data were collected. This provided an in-depth record of the communication skills of Dean, Glenn, Helen and Vivienne. If behaviour occurred after intervention that was not observed prior to intervention, it seems likely that the intervention was implicated in those changes. The age, history, and extensive observations of the four participants make it unlikely that a specific and sustained change in their behaviour was the result, in each and every participant, of some event other than the intervention. In this study then, change could be measured in quantitative terms from the coded categories of behaviour and the tabulation of the items in each section of the environmental checklist. In addition, the running records provided detailed contextual data that illustrated the ways in which change occurred, and the group interviews with the vocational staff and discussions with the residential staff lent support to the evidence of the observation data.
Phases of the Study

Phase One

Data collection took place over a period of 10 months and was divided into three phases. Phase one (see Figure 6.2, p. 110) lasted five months. Initial data collection to trial and refine the measures took place in the vocational and residential setting over a period of three weeks. During this time the method of undertaking running records did not change substantially. Minor changes such as those described previously, were made to the environmental checklist to better reflect the segregated environments in which Dean, Glenn, Helen and Vivienne lived and worked.

Once the final form of the measures had been determined, observations began to establish agreement between observers for the coded data and the environmental checklist (see earlier comment re reliability checks). After one week, formal data collection commenced. During this initial period it had become apparent that it would be necessary to extend data collection strategies in order to gain some understanding as to why staff behaved in the ways that they did towards Dean, Glenn, Helen and Vivienne. To this end, an interview schedule was designed and interviews were scheduled during the baseline data collection phase. This broadening of the focus of the research is typical of qualitative studies (Maykut & Morehouse, 1994) and was taken to help illuminate that which was being observed and to enable, as much as was possible, the perspectives of all of the participants (Bogdan & Biklen, 1982) to be gathered. Stainback and Stainback (1989, p. 271) noted that:

such research involves being unusually thorough and reflective in noticing and describing everyday events in field settings and in attempting to identify the significance of the events from the various points of view of the people involved.
Subsequent to initial data collection, running records, coded observations, the environmental checklist and field notes were completed in the vocational setting until data had been collected for
each disabled participant during at least one 10-minute period in each half hour of the days on which the disabled participants attended that setting (some 12 weeks). Four weeks after observations began in the vocational setting, data collection began in the residential setting between 7:30am and 7:30pm over seven days of the week except those times at which Dean, Glenn, Helen and Vivienne were at the vocational setting, engaged in personal care, travelling or when it was felt that the presence of an observer would draw unnecessary attention to the target individual. Approximately 17 hours of observation were completed of each of the disabled participants in this phase. This observational data formed the basis of the communication profiles that were written for Dean, Glenn, Helen and Vivienne.

One of the difficulties that people with severe disabilities often experience is in having their communicative behaviour recognised as such. To many people, individuals with such difficulties appear to be very passive and non involved (Gleason, 1993; Hill & Leary, 1993). Severe disability often imposes a range of restrictions on those individuals experiencing it that precludes people with such difficulties from using augmentative communication strategies without at least, initial assistance. This assistance often requires the use of physical and verbal prompts to establish patterns of behaviour around the use of new communication methods. To offer the use of such strategies, staff need to see when opportunities arise. To this end, the staff in this study had to be sensitive to the communicative behaviours that Dean, Glenn, Helen and Vivienne used that created the opportunity for communication to take place.

Communication profiles were written to describe the communicative behaviours and to detail the opportunities available for each of the participants to communicate in each of the settings in which they were engaged. These profiles formed the basis of the staff training that took place in the vocational setting and one month later in the residential setting. Based on the initial findings from phase one observations, these sessions focused on the recognition and on the development of those opportunities for communication that arose within the contexts in which all of the participants were living and working. The focus of training was for staff to identify communication opportunities when they arose.
and to develop communicative interactions by reflecting on their own practice (Adler, 1993) and how their behaviour affected the communication they had with their clients. Baseline data continued to be taken up until the day before staff training occurred. On the day after staff training, data collection commenced for phase two of the study. Phase two of the study therefore began one month earlier in the vocational setting than it did in the residential setting.

It was seen as important that training in the residential setting and in the vocational setting should be completed at different times. One of the goals of the study was to identify any change arising from any interventions introduced, such as staff training. Therefore, it was desirable that change arising specifically from training be illustrated. To this end, baseline data collection in the residential setting continued until the introduction of staff training for staff in that setting.

**Communication profiles.**

The communication profiles which detailed the skills and difficulties that Dean, Glenn, Helen and Vivienne possessed, were written using material from the running records, coded observations, field notes and the environmental checklists completed over phase one of the study. Assessing the communication skills of individuals in natural contexts has provided a bridge between the perceptions of professionals who traditionally conduct their assessments under clinical conditions and the experiences of families (Goode, 1994) and friends. Bogdan and Taylor (1992, p. 281) expanded on this point when they stated that:

The non disabled people's belief in the ability of their severely retarded friends and loved ones to think often runs counter to professional and clinical assessments. In some cases doctors have told them that their partners are brain dead. The non disabled people report that they have often been bombarded with specialists' judgements that, in their eyes, underestimate their partners capabilities. They argue that specialists are not privy to the long, day-by-day, hour-by-hour observation of the person. Behaviours that they cite as indicating understanding do not occur with such frequency that the professional is likely to see them, further, unlike the non disabled partners in the relationships, professionals are not intimately familiar with their clients and therefore are not attuned to the subtleties of their sounds and gestures.
In addition, there are very few assessment tools that can accurately and meaningfully measure the abilities of people with complex problems including communication (Beukelman & Mirenda, 1992). Observation in natural and functional contexts therefore constitutes a powerful means with which to understand the skills that people have and the conditions under which they can best use them.

Communication is a complex interaction between a communicator and the other people with whom she or he interacts. It is affected by the behaviour of the communication partner and by the supports available in the physical environment. Central to the understanding of the communication of people with severe disabilities therefore, is information on the skills and needs that the individual with the disability brings to an interaction, the attitudes, practices, knowledge and skills of communication partners and the support received from the physical environment.

Communication profiles were prepared for each of the disabled participants but two versions were produced. One version related to the person in the residential setting, and the other to that person in the vocational setting. Each profile was made up of two sections. The first section included details of the strategies used by the individual to initiate communication. This section of each version of the profile was compiled using the data collected in both settings. The second section of the profiles described the opportunities that the disabled participants had for communication in the settings in which the staff who read the profiles worked. The second section of the profiles reported here contain information from both of the settings.

The information contained in the profiles was primarily gathered from the running records and focused on the repeated use of strategies that the disabled individuals used when they created communication opportunities with others or when they responded to the communication initiations others created. Also noted in this section was whether the participants used a range or hierarchy of behaviours in specific situations for specific purposes or they used a limited number of behaviours that appeared to convey a range of information.
In identifying how Dean, Glenn, Helen and Vivienne attempted to communicate with others, specific behaviours could be identified by staff and used as opportunities in which communication could occur. As a part of the assessment process, it was also important to identify any specific difficulties that individuals appeared to experience that could limit the use of such augmentative strategies. For instance, if an individual largely used eye contact or eye pointing to initiate communication and appeared unable to make voluntary or non-habitual arm or hand movements (for whatever reason) then this would impose limits on the communication strategy that could later be identified.

The contexts in which the disabled participants successfully communicated were also examined. Of specific interest from the running records and the environmental checklists were whether environmental (either physical or social) conditions created situations in which Dean, Glenn, Helen or Vivienne were particularly relaxed or comfortable or motivated to communicate. Conversely, any situation resulting from environmental conditions in which the disabled participants experienced confusion, distractibility or became upset were also identified.

Contextual information relating to the particular interests that an individual had was also relevant in the preparation of communication profiles. Such information was used to establish an initial vocabulary for the augmentative strategies designed for Dean, Glenn, Helen and Vivienne. Similarly, the identification of situations in which people were motivated to communicate created the potential for environmental adaptation. Once identified, these situations could be used to provide increased communication opportunities.

Detailed observations over time allow for the demonstration of specific skills and abilities. For instance, the following of complex instructions with and without visual prompts, the ability to use symbols (e.g. drawings of cups, food), or the ability to use print in some circumstances, are all indicative of skills which if observed can alert the observer to the skills that individuals possess. The presence of such skills assist in the establishment of the type of symbols individuals could use with their augmentative communication devices (symbols
with high levels of iconicity, abstract symbols, print). The recognition of such skills, where possible from running records, is also discussed in each profile.

The second part of each communication profile describes how successful Dean, Glenn, Helen and Vivienne were in communicating with others in the residential and the vocational settings. This information was primarily gained as a result of the analysis of the coded observations and was supplemented by the running records and by the environmental checklist. Clearly, if there is a need for change to enable people with severe disabilities to enjoy greater success in their communication with others, some way of measuring the changes that occur as a result of intervention is also essential. The literature has noted that although people with severe disabilities attempt to establish communication with others, their communication partners do not often respond (Houghton et al., 1987; Ogletree et al., 1992). If communication partners are alerted to the things that people do by way of trying to establish communication then it is reasonable to expect that changes in the above measures should also occur. Such information is therefore essential to the change process.

Field notes were used to determine the most common reasons for staff to initiate interactions with their clients. This information was significant in that if staff communicated mostly to give instructions, few opportunities for communication would flow on, whereas general comments or social interactions would provide a richer source of opportunity for further conversation. Similarly, the number of activities available to each disabled participant and the ways in which activities are conducted can constitute significant opportunities for communication to occur. This information was gathered from the environmental checklist and completed the picture created in the communication profiles of individuals as communicators in their social and physical settings.

The completed communication profiles formed a substantial component of the staff training that was provided at the end of the first phase of the study.
Intervention: Staff training.

There have been a number of research studies which have investigated the efficacy of in-service training for staff. Unfortunately the results of such studies have not been overly encouraging. It would appear that such training often lacks a clear purpose or goal (Sexton, Snyder, Wolfe, Lobman, Stricklin, & Akers, 1996) as a result of there being little examination of the relationship between specific training strategies and actual practice (Bailey, Buytte, & Palsha, 1990). For in-service training to be successful, it must relate to specific practical problems commonly encountered by participants (McLeod, Houston, & Seyfort, 1995). In the case of this study the, "who, how and why do people communicate" formed the basis of staff training (McLeod et al., 1995, p. 6).

Of particular importance to any in-service programme is the question of reinforcement, on-going discussion and feedback to support behaviour change (Demchak & Browder, 1990; Sexton et al., 1996). In the normal course, the person facilitating the in-service programme should be the person responsible for the provision of mentoring and support yet this support does not often last beyond the actual training programme. If in-service is intended to be a catalyst for change, the mentoring role is critical. Although the change occurring as a result of using mentors from within an organisation rather than "experts" in the field has been seen to be slow, sustainable changes have been seen to occur (Gersten et al., 1995).

While it may be that the researcher as "expert" could provide significant and intensive feedback, there is often a distance between themselves and direct care staff. This distance is likely to inhibit the development of a supportive, non-judgemental atmosphere in which staff feel free to discuss concerns. Conversely, the development of a collegial focus to problems of practice has been seen to create positive changes in workplace (Pugach & Johnson, 1995). In using this model staff are encouraged to collaborate with their peers, to identify problems of practice, and then to consider how changes in their own behaviour could successfully improve the quality of their work.
If staff could be encouraged to work cooperatively in dealing with problems of practice, their solutions to problems may not be those advocated in the literature and the process of change may be slow. However, the likelihood of staff gaining confidence in their work and in getting the support they need to change would be enhanced (Pugach & Johnson, 1995) well beyond the end of the study. Additionally, the world in which they work and the pressures under which they must operate are central to any difficulties they encounter and solutions they develop. If staff have an understanding of their workplace and the pressures on them, the solutions they develop to deal with problems of practice should reflect that (Gersten et al., 1995; Malouf & Schiller, 1995).

Staff from each setting met separately with the researcher and the observers involved in data collection to discuss the communication profiles. The vocational staff met on one evening from 4:30pm to 9:00pm. Training for the residential staff occurred between 10:00am and 2:30pm one month later. A colleague also engaged in research on communication acted as an observer and recorder at these meetings. Every effort was made to keep the meetings as informal as possible and to give information to the staff in ways that did not make any judgements on their ability to meet their clients' needs. The meeting was divided into four sections:

(i) As a result of the wide range of views reported in the literature and arising from interviews, the training sessions opened with a discussion with staff to come to a consensus as to what "communication" was and how people with severe disabilities might attempt to initiate "communication interactions". After this initial discussion, the working definitions for communication opportunities and responses for the study were introduced. Notes were made on a white board summarising the points raised.

(ii) A summary of the following data from the second part of each profile was presented:
• the opportunities created by the disabled participants for communication to occur, the responses made to those initiations by
staff and the initiations made by staff and the responses they achieved;

• the level and frequency of activity in which the disabled participants engaged;
• how staff encouraged or discouraged communication interactions occurring and continuing.

(iii) A presentation and discussion followed of the skills and needs of each of the disabled participants. Some time was spent working through the first part of each of the profiles and highlighting the main points in each. At this point, one of the observers noted any questions raised by staff and the responses that were made on a whiteboard. The independent observer kept notes on any issues that seemed problematic to staff members, related either to the profiles themselves or the feedback they were receiving. Staff each received a written copy of the profiles to take away to read and reflect on.

(iv) The last part of the session covered discussion of the issues raised in the preceding sections. It focused on how staff felt they might make changes in their setting in order to avoid some of the communication issues that were outlined for the disabled participants in the first parts of the session. Discussion was facilitated in this session around the following themes:
• interaction style with each of the disabled participants
• opportunities for communication
• environmental accommodations
• the potential for activity to promote communication.

Phase Two

Subsequent to staff training in both of the settings, data collection continued for a further three months using field notes, coded observations and the environmental checklist. At this time, data collection was timed to ensure a representative sample of Dean, Glenn, Helen and Vivienne's waking days in both settings. To this end, timetables were made for Dean, Glenn, Helen and Vivienne that detailed their movements over the course of the week. Observations were made
to ensure that a balance was maintained across the settings and the various activities in which they participated.

As discussed previously the frequency of data collection was reduced as a result of the change in need for recordings of behaviour. In the first phase of the study, data were required to build up pictures of Dean, Glenn, Helen and Vivienne as communicators in their social and physical worlds. In addition, coded observations (extracted from the running records) recorded basic information on the availability of communication opportunities, responses to them and the length of interactions. The purpose of data collection in phase two was to determine the effect that staff training had on the interactions that staff had with Dean, Glenn, Helen and Vivienne. In this phase it was important to ensure that there were sufficient observations to be able to describe the quality and quantity of communication that they enjoyed. However, it was not necessary to gather the depth of information that had been required to discuss the complexity of behaviours that contributed to Dean, Glenn, Helen and Vivienne’s communication. To this end, a further six hours of observation was completed for each person across the two settings.

Although the same proportion of observations was taken in the vocational setting and the residential setting in phase two (as they were in phase one), there were longer intervals between observations in the vocational setting in the second phase. This was done in order that at the end of the second phase, augmentative communication strategies could be introduced to Dean, Glenn, Helen and Vivienne simultaneously in both settings. While it was important that the effect of staff training could be measured separately in each distinct setting, it was equally important that Dean, Glenn, Helen and Vivienne had access to augmentative communication strategies as soon as they were available. If in fact their impairments meant that they did have problems in generalising new skills (Halle et al., 1984), it was important to ensure that they had maximum opportunity to use any new strategies in both settings.

One month after staff training in the vocational setting, a group interview was held with staff. The interview took place immediately
after their morning staff meeting and concluded with the arrival of the first clients. This interview took approximately 30 minutes and was audio-taped. The interview record was later transcribed and returned to the vocational staff for their response or any amendments.

Due to scheduling difficulties it was not possible to complete the same interview in the residential setting. Instead, the Manager of that service was approached and agreed to canvas the opinions of her staff about the staff’s response to the training session. She did this using the interview guide (Maykut & Morehouse, 1994) that had been designed for the group interview in the vocational setting. Subsequent to this, she and the researcher met on one occasion to discuss feedback.

**Group interview.**

The purpose of this interview was to determine from the perspective of staff, what they perceived had been the outcomes from the staff training sessions. As has already been discussed, attitude is a major determinant of practices in which people engage in the course of their daily lives (Malouf & Schiller, 1995). In some case, training has been shown to be a catalyst for attitude change (Tanner et al., 1991). There was value therefore, in conducting an interview with staff to determine whether or not the training that they had received had actually caused them to re-evaluate their beliefs about Dean, Glenn, Helen and Vivienne. Along with the continued collection of running records, field notes, coded observations and the environmental checklist, data from interview and discussion provided a useful means of determining the value of the staff training model developed for this study.

The group interview and the facilitated discussion was less formalised than the individual interviews conducted in phase one of the study. An interview guide (Maykut & Morehouse, 1994) was prepared that provided an outline of the main points to be covered in this discussion.

Feedback was requested from staff on the following points:

* responses to the staff training subsequent to the training sessions both in terms of the quality and usefulness of the information presented and individual responses to the data presented;
• the changes that staff felt that they had made in respect of their interactions and relationships with Dean, Glenn, Helen and Vivienne;
• the changes that the organisation had made as a result of the presentation of findings;
• anything that staff felt that they had learned about Dean, Glenn, Helen and Vivienne or that they had noticed for the first time;
• any problems that they had encountered in trying to implement change.

**Phase Three**

At the outset of phase three, the individual augmentative communication strategies that had been designed for Dean, Glenn, Helen and Vivienne were introduced to them and to their staff in each setting. Phase three ran for two months. Running records, coded observations, field notes and the environmental checklist continued to be taken over this time. Observations were made in both settings to ensure that a representative sample of behaviour continued to be taken. A further three hours of observation of each disabled participant were completed. At this stage, observations and checklists were used to record any changes occurring to the initiation patterns of staff and the four disabled participants, interactions generally, activity patterns and the communication content of interactions. In addition, field notes recorded the use of augmentative strategies. These also detailed any informal observations that were made in either setting, discussions with staff, and in this phase, were invaluable for recording information around the implementation and monitoring of the use of the augmentative strategies.

**Intervention: Augmentative communication strategies.**

Each of the disabled participants had communication strategies designed for them that reflected the skills and needs that they had with respect to communication. Each of these strategies was designed on the basis of the information available from the communication profiles prepared in the first phase of the study.
The literature has noted that people with severe disabilities have been shown to use a wide variety of idiosyncratic behaviours with which to attempt communication (Baumgart et al., 1990; Donnellan et al., 1984). However, many people who care for individuals with severe disabilities see those people as very passive (Reichle et al., 1989) and uncommunicative. In addition, there is also a recognition that people with disabilities generally have difficulties in eliciting from and giving support to communication partners (Wenz-Gross & Siperstein, 1997). Whether this difficulty is innate to individuals with disability or it occurs because they are frequently ignored (Houghton et al., 1987) is debatable. Nonetheless, in respect of communication intervention, it is an essential first step that those who interact with people with severe disabilities are aware of communication initiation behaviours when they do occur.

If people with severe disabilities experience difficulties in eliciting interaction, then it is reasonable that this will continue to be the case, even with the use of augmentative communication strategies. There has also been a suggestion that such people do not often generalise new behaviours (Halle, 1987). More recently, it has been noted that the best chance of new learning taking place is in the use of a lifestyle support approach (Newton et al., 1995) which focuses on learning in the natural environment. It is reasonable to suggest therefore, that people with severe disabilities will need time to learn new initiation behaviours. This learning will be best done when they can see that the use of augmentative communication strategies assists in the communication process. To this end, and arising from training, staff were encouraged to offer the use of the augmentative strategies as and when they saw Dean, Glenn, Helen or Vivienne creating opportunities in which communication could take place.

In determining the most appropriate communication strategies for Dean, Glenn, Helen and Vivienne to use, there was a preference for the use of low technology communication aids. The more sophisticated aids are very expensive to purchase in New Zealand and there are few agencies that can offer repairs when they are needed. In addition, motor disorders are very common amongst people with severe intellectual disabilities (Rogers, 1992), even in the absence of physical disability.
Those devices that were available that would suit Dean, Glenn, Helen and Vivienne were very limited in the degree to which open ended communication was possible. They were therefore discarded in favour of strategies that required little more than human interaction, time and a minimum of skill on the part of all participants.

Dean and Helen both began to use eye pointing with either real objects or Makaton (Walker, 1991) symbols. These symbols are made up of line drawings of objects and simple drawings of human figures to illustrate actions or emotions. When they created a communication opportunity, staff would offer the symbols for "yes" and "no". They would then ask the communicator if there was something he or she wanted. Subsequent to Dean or Helen eye pointing to the symbol of choice, he or she would be offered a range of symbols to indicate food, drink, self care, feelings, directions or activities. In other instances and due to the context of the interaction, staff could much more quickly problem solve and go directly to the appropriate symbols.

With emotional support and physical support at the wrist, Glenn began to use facilitated communication (Donnellan, Sabin, & Majure, 1992) with print. When he created a communication opportunity he was either asked to get his letterboard (a laminated representation of a typewriter keyboard) or the "Canon" communicator he sometimes used. Staff would then provide the support he needed and engage in communication. Vivienne also used facilitated communication. She used a communication book consisting of a number of pages of Makaton symbols grouped under the headings of food, drink, feelings, activity, directions and personal care. She had two books which were customised for the residential and the vocational settings. The front page had a menu on which key symbols for each of the other pages were printed. With some emotional support and a little physical support at the elbow she pointed to the page she wanted. The support person then turned to the appropriate page and Vivienne made her choice. At other times, staff could provide Glenn and Vivienne with the support they needed to make choices (eg. from lists of activities or food items), depending on what was required at any particular time. Whenever staff wished to initiate communication with any of the disabled participants they used of the same strategies.
The design of the augmentative strategies used by Dean, Glenn, Helen and Vivienne was achieved by identifying their ability to interact with symbols (iconic, abstract or print). Some indications of these skills was available from the communication profiles. Further assessment of their skills to interact with symbols was completed in one session. Vivienne could interpret symbols with a high level of iconicity without difficulty and Glenn, who had attended a regular school for two years, used a limited number of printed words. These assessment sessions also enabled the development of an understanding of the most appropriate methods for Glenn and Vivienne to access symbols. Subsequent to this, time was spent with each person, and in Vivienne's case a member of staff whom she trusted, to introduce the strategy and to further determine the support required to access that strategy. Training for key members of staff (i.e. individual "key workers" or those who appeared to have particularly strong relationships with the disabled individuals) in the use of the strategies followed. At this time, staff were referred to the communication profiles to identify the most appropriate ways and times to assist individuals in the use of their strategies. This instruction for staff occurred in both the residential and the vocational centre simultaneously. Subsequent to these sessions and monitoring and ongoing consultation with those key staff members, training for other members of staff followed. At this time, the key staff members already trained in the use of the strategies, introduced them to their colleagues with the help of the researcher. As was the case in respect of the initial staff training, this approach was intended to create a climate in which staff could act as mentors (Gersten et al., 1995) for their colleagues and thereby take control of the introduction and maintenance of communication in their workplace.

Subsequent to this introduction, twice weekly visits were made to each of the settings over two months. Each visit involved time spent interacting socially and within the context of the activities that were taking place with one or more of the disabled individuals. The aim of this involvement was to model the use of each strategy and to suggest ways in which the strategy could be incorporated into the day-to-day lives of each person. In addition, any concerns or queries that staff had about the use of the strategies were discussed. After data collection was
completed weekly visits continued to be made for a further three months to offer on-going support to staff and to Dean, Glenn, Helen and Vivienne.

**Analysis of Results**

**Running Records**

The analysis of the data from the running records began concurrent with the collection of that data. Running records were examined for patterns in the behaviour used by Dean, Glenn, Helen, Vivienne and all those others with whom they interacted. In particular, information was sought in response to two general questions: first, how did each individual create opportunities for communication, and second, how successful were they in achieving communication.

As running records for each individual were completed, they were numbered chronologically and then examined. As each running record was examined, its number was recorded separately. Any data related to either of the questions for analysis was then transcribed from the running record and identified by the number of the observation from which it came. As data accumulated, it was possible to break these two data groups into sub-categories. In respect of the group: creating communication opportunities, commonly occurring behaviours were grouped together. The running records of those behaviours were then re-examined for contextual information that over time, could have supported the development of hypotheses or propositional statements. At this stage, considerations included: any information that could lead to an understanding of the cause of a particular behaviour, or any environmental effect that could have created difficulties or limited the use of behaviours or which could have assisted in the use of a particular behaviour. For example, it became apparent over time that Glenn experienced difficulties with noise in some situations. Data on incidences in which Glenn seemed to find noise a problem were then grouped together. The accumulated data provided a number of clear examples of how those conditions affected his behaviour.
The records of behaviours that did not fall into specific groups were also examined for any contextual information that could have assisted in understanding how they occurred.

With respect to the question: how successful were communication initiations, examples of successful communication interactions were recorded as were those that were not successful. In addition, this section was particularly concerned with the communication behaviour of other people in Dean, Glenn, Helen and Vivienne’s environment, the reasons why others communicated and the particular strategies that they used to secure communication. The information grouped in this section was analysed according to the same format described above and was later supplemented with information from the coded observation categories.

**Coded Observations**

The coded observational material extracted from the running records was used, along with the data described previously, in the second section of the communication profiles and results relating to phase two and three.

The communication opportunities created by the disabled participants and the staff were each summed and expressed as average scores per 10 minute observation.

Responses to communication opportunities were summed, and expressed as percentages of total communication opportunities.

Average length of interactions was calculated by adding the total number of turns taken in interactions in each phase, divided by the number of interactions that took place in that phase.

How frequently staff encouraged communication was calculated by totalling the number of encouraging statements made, and then expressed as percentages of the total number of staff communication opportunities and responses (i.e. as percentages of occurrence during interaction).
The coded data pertaining to each disabled participant were then presented in tables in each of the individual case studies.

**Environmental Checklists**

Each time a running record was taken during the data collection phases, an environmental checklist was also completed. Each checklist was then attached to the running record. Environmental checklists were designed to identify any events or activities in the wider social and physical environment that could have affected the behaviour of individuals. As each running record was analysed, so too was the environmental checklist taken at the same time. The data gathered from the running record were then compared with the findings from the environmental checklist.

Environmental checklists that were taken at the time that specific communication behaviours were observed in the running records were compared with the checklists completed at same times that similar behaviours occurred. Patterns in the items checked on the environmental checklist were then recorded along with those behaviours and were used to support the propositions made about behaviours.

In addition to the use of the environmental checklists to support the propositions generated from the themes in the running records, the frequency with which specific items on the checklist occurred during each phase was calculated to enable general comparisons between phases. The number of times an item was checked on the checklists taken in each phase were added together and expressed as a percentage of the number of observations.
Field Notes

Supplementary field notes were collected for the duration of the study when events occurred in the environments under observation that were not recorded elsewhere. Field notes included discussions with staff, unusual events, or specific incidents involving the participants outside of the observations in which they were targeted. Field notes relating to events or incidents surrounding running records were attached to those records. Field notes on Dean, Glenn, Helen and Vivienne were kept separately in individual files.

Once the data from the running records and environmental checklist were compiled into their categories and propositional statements had been made about individuals, the field notes were checked for any supplementary information that could confirm or contradict the statements that had been put together. Field notes were then grouped with that information and where verbatim quotes from the field notes are used in the results, they are identified as such.

Interviews

In respect of the analysis of the individual staff interviews, the semi-structured schedules were used to provide the initial categories for analysis. Sub-categories of response were developed from this grouping and propositional statements generated as themes emerged from the overall data (Maykut & Morehouse, 1994). Quotations from the raw data were included with each propositional statement.

The group interview in the vocational setting and the facilitated discussion in the residential setting were considerably more informal than the individual interviews, however, the same method of analysis was used. The issues addressed in the group interview guide determined how the data from the interview and discussion were grouped. Themes which emerged from this data were used to generate propositional statements which were then supplemented with verbatim quotations in the final results.
Communication Profiles

Data from the running records, the coded observations and the environmental checklists taken in phase one of the study were used to complete the communication profiles. Profiles each contain two sections, how the individual in question attempts to communicate with others and how successful their communication is. These sections relate specifically to the categories used in the analysis of the raw data. As the propositional statements and supporting information grew from the data analysis, they were transferred into the communication profiles on each of the disabled participants. These statements were then supported by verbatim transcripts from the running records and are identified in the results by the number of the observation from which they were drawn.

Phase Two and Three

After staff training, data continued to be collected using running records. The analysis of that data was undertaken separately from the data collected in phase one and used the same methods described previously. During staff training, the staff had identified that the provision of activities were important in creating opportunities for communication. In phase two and phase three, information from the running records as to the access that the disabled participants had to activities was collated as an additional category to those in which communication opportunities and the success of communication had previously been gathered.

During these phases, there was a reduction in the number of actual observation sessions undertaken. The aim of data collection in these phases was to identify what changes had occurred and where those changes had taken place. To this end, while data continued to be analysed using the same range of questions and groupings, the concern was to identify changes and where they had occurred subsequent to staff training and the introduction of augmentative strategies.
Case Studies

Case studies comprise data collated and described in the communication profiles from phase one and the results described in phases two and three. They describe the communication used by individuals over the course of the study and the success or otherwise of their communication. In addition, changes that occurred as a result of staff training and the introduction of an augmentative strategy, the access that Dean, Glenn, Helen and Vivienne had to activities and the changes in the behaviour of staff over the course of the study are reported.

Summary

Data analysis in this study passed through several stages and was subjected to both qualitative methods and quantitative summation and comparisons. In the first stage of analysis, data were collected from running records, coded observations extracted from the running records, the environmental checklists and field notes. Categories were then established to identify those behaviours that individuals used in initiating communication and to identify how successful their communication was. Statements about these specific behaviours and the actions or events around which behaviours were commonly observed were then made and supported using verbatim data from the running records.

Interview material was categorised according to the schedule designed to complete the individual interview and the guide developed to complete the group interview and facilitated discussion. Themes emerging from these categories formed the basis of the propositional statements from which the final results were written.

The quantitative data used in this study were collected from the coded observational codes and the environmental checklists. These data are either expressed as frequency of occurrence, average occurrence per observation in each phase or as percentage of occurrence in each phase.
CHAPTER SEVEN

Results

The communication profiles developed for Dean, Glenn, Helen and Vivienne and the results from phases two and three form the case studies presented in this chapter. Interviews with staff and discussions with them complete the picture of the disabled participants in their social worlds.

The results reported in this chapter include data recorded in running records, coded observations, the field notes and the environmental checklist. All of this information was compiled and is reported here as individual case studies for Dean, Glenn, Helen and Vivienne. The results of the individual interviews completed with staff in phase one and the feedback from staff training and group interviews in phase two are also presented (see Figure 7.1 for the order and phases within which the various aspects of the study were completed).

Figure 7.1: Data Sources at each phase of the study and the interventions that took place

(3) The three phases of the study:
Phase One (5 months), initial data collection, baseline data collection to determine what people are doing when they try to communicate, how frequently they do it and the responses they get (running record and coding), what supports there are in the social and physical environment (environmental checklist) and what drives the things that staff do (interviews). Development of communication profiles, staff training.
Phase Two (3 months) on-going completion of running records, coding and environmental checklist to record change. Focus interviews with staff.
Phase Three (2 months) introduction of individual communication strategies. Liaison, consultation and problem solving with individual staff. On-going completion of running records, coding and environmental checklist to record change.
Case Studies: Introduction

Each case study is made up of an individual communication profile and data collected during phases two and three of the study. Each of the profiles is unique to the individual in question and is made up of data that were obtained from the running records and coded observations in phase one of the study (Figure 7.1). The picture of each individual in his or her social world is complemented by data drawn from the environmental checklist (Appendix 4). Each profile describes the communication strategies used by that participant in the course of interactions or attempted interactions with other people in his or her environment. In addition, a description of the particular interests and motives of each participant is included where that was available from the range of observations completed. All of this information was fed back to staff at the beginning of phase two and was then used to design individual augmentative communication strategies which were introduced in phase three (see Figure 7.1).

The second part of each case study details the changes with respect to communication that occurred in Dean, Glenn, Helen and Vivienne’s lives once staff had had feedback from phase one of the study and had completed a problem solving session to change the communication environment (phase Two). In addition, data are included from phase three when staff and the disabled participants were introduced to the individual augmentative strategies (see Figure 7.1).

While these profiles relate primarily to the communication skills and strategies used by Dean, Glenn, Helen and Vivienne, it is important to note that communication is not an event that occurs in isolation. The communication partner will make a significant difference to that interaction. Consequently, the effects of the behaviours of communication partners (i.e. staff) on the four participants are an essential element to the completion of these profiles.

The communicative intents of the behaviour of staff towards the four disabled participants were identified from the running records and are also presented graphically in each communication profile. The four categories of intent were defined as; instruction giving, information
transfer, social closeness and social etiquette (Light, 1988 in Beukelman & Mirenda, 1992, p. 7), these categories are defined as follows:

- **Instruction giving**: ...to regulate the behaviour of the listener toward an action oriented response.
- **Information transfer**: ...has as its goal the sharing of information rather than the regulation of behaviour.
- **Social closeness**: the goal of this type of interaction relates to establishing, maintaining or developing personal relationships.
- **Social etiquette**: ...to conform to social conventions of politeness through interactions that are often brief and contain predictable vocabulary.

While it was relatively straightforward to assign intent to the verbal communications of staff, such an analysis was not always possible with respect to the four disabled participants, except where that had been very obvious from the context of an interaction and the patterns of individuals' behaviour observed and recorded over time. As has previously been discussed, to assume that it is possible to determine intent solely on the basis of antecedents and consequences is to deny the potential for communication that is without an immediate environmental antecedent or has been learned as a result of previous experiences and encounters.

In addition, it has already been argued that in order to support the development of communication in people with communication difficulties, it is essential to know that people are, in the first instance, attempting to communicate and secondly, how they are doing it. On this basis, an analysis such as this will allow for the development of communication strategies that provide opportunities for users to express their needs, transfer information and interact in socially acceptable ways (Beukelman & Mirenda, 1992). However, it was essential to understand the intent behind the interactions that staff initiated. If, for instance, staff predominantly interacted with the four disabled participants to tell them what to do or to use statements of etiquette, there would be few opportunities for interaction to occur.

It should be noted that while the coded data of the communication behaviours of Dean, Glenn, Helen and Vivienne were collated individually, the data on staff behaviours towards each disabled participant were grouped. Preliminary analysis of the communication
behaviours of staff towards all of the four disabled participants indicated that there were insufficient data on the behaviour of many individual staff members to indicate how their behaviours affected interactions. Since observations were focused on the four target individuals, the communication opportunities created by others could only be recorded where these occurred when the individuals were under observation. Given the paucity of information on some individual staff, the collation of individually coded staff behaviours would have provided little more useful data than that which is collectively presented here to measure change.

In some cases the individuals with disabilities clearly sought out particular staff or avoided others. Where this was obvious from repeated examples of the same behaviours, the effects of individual staff behaviours could be studied. Where this was the case, observational data from the running records have been incorporated into the communication profiles.

**Environmental Checklist**

While the results from the environmental checklist are presented in the individual communication profiles and data from phase two and three, the sections: "Relationships between Clients and Residents", and the final section: "Physical Layout" in the checklist (see Appendix 4) did not yield useful comparative information. The nature of these results suggested that in the settings used for this study there were few opportunities for the layout to change or for a variety of communication partners to be available. For instance, the section: "Staff Facilitation of Relationships" notes that a range of people who are familiar with each other and who have a range of communication styles is necessary for the development of communication strategies in people experiencing those difficulties. While there could be little doubt about the importance of these variables, the reality for the participants in this study (and many others) was that the settings in which they lived and worked only included people identified as having intellectual disabilities and paid staff. This population of people was relatively stable, they had not moved about and consequently they tended to use the same
services over long periods of time. As a consequence, the results were very stable across all phases.

In addition, the section: "Relationships between Clients and Residents" lists items that are substantially similar to other items that appeared elsewhere on the checklist. For example, the item: "Attempts by staff to develop shared meaning" is very similar to the item: "Staff act as Facilitators" in the section: "Relationships Between Staff and Participants". The results achieved from these items remained very low across all phases of the study. As a consequence of these issues, the sections from the environmental checklist on "Relationships between clients and residents" and "Physical Layout" are not discussed in the communication profiles.

Settings

In New Zealand, people with intellectual disabilities were commonly housed with other people with intellectual disabilities in separate institutions or in wards in psychiatric hospitals. Upon the closure some five years ago of the institution in which the disabled participants in this study resided, the residential and the vocational settings described here were established.

The residential setting was one of four houses administered by a trust made up of the family members of the residents and professionals with an interest and expertise in the field. It was funded by central government through Vote Health to provide residential services and some daily living skills training for the residents. This setting was evaluated regularly on the quality of the services provided using qualitative measures designed to assess such things as the quality of life enjoyed by residents. It was a large modern facility that had been purpose built for young people with social and behavioural difficulties. Each of the 14 residents had their own rooms, each of which was decorated with personal photos, bed linen, pictures and ornaments. There were a number of communal living rooms in which people could eat, watch television, chat, listen to music and complete personal and group activities.
There was one staff member for each four residents and staff worked on one of three shifts over a 24-hour period. Many of the staff in this setting were also involved with the residents outside of their working hours. One staff member took a number of the residents to her country music club, another took residents when she went to her indoor bowls club and the son of another regularly went to the gym with one resident. A number of volunteers also participated in outside activities with residents.

The routine of the day did not change a great deal in the residential setting. The mornings were concerned with getting people up and ready for their transport to the day centres they attended on four out of five days per week. The late afternoons, when people returned to the residential setting, were concerned with preparing lunches for the following day and with evening meal preparations. All of the residents were involved to some extent in these activities. After the evening meal, there was a weekly house meeting when menus would be decided, residents encouraged to share stories of things they had done and where discussion took place about any difficulties that individuals had experienced and wished to share. On other evenings, numbers of the residents would go out with staff members to local pubs, to the movies or to the clubs mentioned previously.

Each of the residents had one "at home day" per week. On these days, the goals set by and for people were addressed within the context of domestic routines, personal shopping, appointments to hairdressers or doctors and general meal and food purchasing and preparation.

Although referred to as the "vocational setting", this day programme did not provide training in the development of vocational skills. At the time of the closure of the psychiatric hospital in which the disabled participants had been resident, each person to be resettled into the community was assigned to a specific category (A, B, or C) which determined the funding they received and the progress they were expected to make towards independence. Those people attending the daycentre described here were selected from the B and C category. They were not expected to progress towards employment and several were considered to be challenging in their behaviour. Consequently,
this centre was licensed to provide daily activities which were expected to develop basic living skills and to create opportunities for access to the local community. The vocational centre was required to report quarterly to its funding agency on the number of client goals that had been met and on the weekly attendance of individuals.

Twelve people attended the vocational centre discussed in this study. It was administered by a trust set up by a local church and it was staffed by members of that church. Although the mission statement stressed the importance of Christian values, the daily staff meetings involved prayer, and members of the church were frequent visitors but no religious conventions were followed with respect to the programme.

Three full-time equivalent staff worked in this centre to support the clients who arrived between 9:00am and 9:45am each day. The day finished when people began leaving at about 3:00pm. The daily programme consisted of activities based both in the centre and in the community. The availability of activities was discussed by staff at their morning meetings and was often determined by the weather or the health and wellbeing of clients. Group outings to community locations included the library, art gallery, swimming pool, beaches and gardens. A small number of individuals often went shopping with staff members or on other errands. In the centre-based activities a very few clients had access to the computer, others could choose to participate in games, craft activities, cooking, listening to and making music, reading or watching videos. The programme stopped daily at 10:00am for morning tea, 12:00 for lunch and at 2:30pm for afternoon tea. Once people began to leave, all of the clients were prepared for departure and waited until their transport arrived.

**Individual Case Studies**

**Dean: Communication Profile**

During the baseline phase, 81 observations of 10-minutes duration of Dean and those who interacted with him were completed for 12 weeks over a period of five months. Fifty four observations were completed in the vocational daycentre and 27 observations were completed in Dean's
residence. Due to illness, there were fewer observations of Dean in both settings than there were of his peers who participated in this study. Observations were timed in order that a representative sample of Dean's days, both in the vocational and the residential setting were covered. During phase one, observations began in the residential setting one month later than in the vocational setting and continued for one month after the observations in the vocational setting were completed. Where possible, one 10 minute observation was made for each 30 minutes of Dean's day between 7:30 am and 7:00pm over each day of the week.

Observations of Dean and others who interacted with him showed him to be a social person, interested in the world around him and keen to make contacts with other people. He would position himself in the main traffic areas of the residential setting and the vocational daycentre that he attended. He was always nearby when social interactions between his house mates, staff or daycentre clients took place. There were particular people with whom Dean interacted very successfully and there were others whom Dean seemed to prefer to avoid.

Dean experienced a number of difficulties that made interaction challenging for him. While he was clearly interested in making social contact with other people, he seemed to experience stress at being physically close to people. He did not use speech or any other recognised means of communication. Beyond using his hands for eating, he kept one arm tucked up on his chest and the other hanging at his side. He found it difficult to manipulate any items with his hands and he seldom used them to gesture. Except when he needed to for balance, he did not like to hold others' hands or have his own hands supported by others to complete activities.

Dean had club feet and these were a constant source of pain to him. At times he was unable to wear boots or to walk any distance. During these periods whenever he had to walk he would grimace and he would wince and hobble at having to weight bear on specific parts of his feet. When he was in pain he spent a great deal of his day seated, usually away from main traffic areas, in discomfort or pain, and he was obviously unhappy. Dean took medication regularly for depression.
How did Dean communicate with others?

Dean used a range of strategies to communicate, the most frequent being eye contact and eye pointing:

obs#22 looks at a plate of cake and then at Jane (staff member). Jane passes the plate, Dean takes one.

In addition to eye contact and eye pointing he used vocalisations, facial expression and body positioning. In interactions initiated by staff, Dean often used a combination of vocalisation, eye contact and facial expression. Dean's facial expressions were subtle, consisting of such things as raised eyes, mouth movements and most often, grimacing:

obs#29 Dean sits in the lounge by the door, he is looking at a large group doing an art activity on the table in front of him. He gets up and walks down the hall making deep groans. He stops, looks back at the group and makes more loud groans. He walks back to his chair, sits, groans again and begins grinding his teeth. He stops, looks over at the group and smiles. Nobody has paid any attention.

Dean often seemed to want to be involved with others. While watching groups of people intently, he would shuffle forward and back, sometimes with vocalisations. If it was noticed that Dean was interested he would sometimes be invited to join the group. When this occurred he would back away. Despite this reticence, a number of staff and clients in both settings would get very close to him. Using some physical contact (usually on the back or shoulder), a quiet voice, few words and visual or physical prompts, detailed interactions between Dean and others could take place:

obs#10 Edward says to Dean, "Can you see that face, that mask?" Dean looks at it. "I can see you looking." Edward moves away. Dean reaches out his hand. "Shall we find something to look at?" He gets a piece of craft work. "Do you remember these, you helped make them." Dean looks and laughs.

Dean also used a number of behaviours which appeared to convey annoyance or refusal. He would ignore the person speaking to him, avert his eyes or move away from people:
There is a music class taking place. Suzanne says to Dean, "Can I sit beside you to help you sing?"
Dean looks away, keeping his eyes averted from Suzanne.
Suzanne tries to show him the book of Christmas carols.
Dean looks away, keeping his eyes averted.
She says, "Dean, Dean."
He looks away again.
She says, "Are you going to help me sing?"
He laughs then looks away with a very glazed look in his eyes.

There were numbers of people, staff and clients, at both the vocational setting and the residential setting whom Dean appeared to avoid, as well as activities that held little or no interest for him. On the occasions he was required to respond to a request in some way, at these times he would use gaze aversion and would also walk away from people as they attempted to interact with him:

obs#15 There is a music class taking place. Suzanne says to Dean, "Can I sit beside you to help you sing?"
Dean looks away, keeping his eyes averted from Suzanne.
Suzanne tries to show him the book of Christmas carols.
Dean looks away, keeping his eyes averted.
She says, "Dean, Dean."
He looks away again.
She says, "Are you going to help me sing?"
He laughs then looks away with a very glazed look in his eyes.

obs#38 Afternoon tea has finished and Suzanne says to Dean, "Come on!"
He stands and walks off from the table.
"Hey," says Suzanne, "You're going to put away aren't you?"
He walks off.
She says, "Hey, hey, you're going to take the plate and the feeder!"
He continues to walk.
"Come on," she says putting the plate in one hand and the feeder in the other.
He walks off and drops the feeder on the floor.
"Not there," she says, "that's not where it goes."
He picks up the feeder and drops it on the trolley for the plates and drops the plate in the bucket for the feeders.
"Do they go there Dean?" she asks. She continues, "Dean, Dean, hang on."
He walks off to a chair, sits and intently watches another staff member.

obs#69 Dean is standing beside the outside doors. He is saying, "mmm"
Sandra says, "It's a bit cold to go out."
Dean turns and glares at her.
She says, "It's cold, you won't like it if you do go out."
He says, "mmm," and walks away towards the book shelf.

obs#45 Some people are going out. Michael says to Dean, "Going to come or stay?"
Dean says, "mmm."
"Coming?" says Michael.
Dean walks towards the door.

Dean used the above strategies outside of obvious communication opportunities and interactions also. When these occurred there was often significant noise, either from staff and clients or from radios, CDs
and tape players. At least one radio or tape (frequently two) was always playing in the daycentre, and staff and the more verbal clients interacted frequently. In addition, there were a number of clients at the daycentre who were individually often noisy. Dean's vocalisations, in tandem with facial expression and physical removal suggested that he often found it difficult to cope with a high noise level. Given this situation, it is suggested that Dean was creating communication opportunities, albeit undirected, to inform others about his disquiet. Based on Grandin's (1992) comments about herself, it may also have been that he was using growling particularly and teeth grinding to screen out, or to concentrate on other sounds that he did not find so offensive.

Dean generally followed through with instructions reinforced by the fact that 65% of all staff initiated interactions were related to giving him instructions (see Figure 7.2). There were many occasions when Dean demonstrated skills only after he was instructed to do so:

obs#57 Dean is sitting on a sofa with Glenn. He has a feeder on and has just had a drink.
Janice reaches for Dean's hands and pulls him up, "If you take your feeder off Dean, take your feeder off!"
He takes it off.
"Now you can put it in the basket down the hall."
He does so and returns to the lounge.

If there was nobody around however, Dean often had little difficulty in completing actions independently. The first observation detailed below, suggested that Dean required high levels of support while the second demonstrated that he could act independently when given the opportunity:

obs#64 Mary says, "come on Dean."
Dean eats, groaning and grimacing
Mary says, "come on Dean." she loads the spoon, "Here."
Dean takes it and eats...
Again Mary says, "come on Dean." She pats his shoulder
Dean eats, groaning and grinding his teeth.

obs#62 Dean is sitting at the table at tea time with Vivienne, Helen and Leeanne, he is eating his dinner.
Angela (staff) loaded his spoon and went away.
Dean continues to eat.
Angela says, "come on Dean."
Dean makes motions to load the spoon but doesn't place it in his mouth. A few moments later he eats.
**How successful were Dean's Communication Initiations?**

**Table 7.1: Communication opportunities and responses by Dean and staff in residential and vocational setting in phase one**

<table>
<thead>
<tr>
<th></th>
<th>Res</th>
<th>Voc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ave. Communication Opportunities by Dean per 10 minute observation</td>
<td>2.18</td>
<td>4.2</td>
</tr>
<tr>
<td>% Responses by staff</td>
<td>22%</td>
<td>6%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns taken</td>
<td>2.47</td>
<td>1.48</td>
</tr>
<tr>
<td>Ave. Communication Opportunities by Staff per 10 minute observation</td>
<td>2.78</td>
<td>1.98</td>
</tr>
<tr>
<td>% Response by Dean</td>
<td>96%</td>
<td>81%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns taken</td>
<td>2.47</td>
<td>1.4</td>
</tr>
<tr>
<td>% Encouragers used by staff</td>
<td>29%</td>
<td>52%</td>
</tr>
</tbody>
</table>

Despite his use of the range of communication strategies described above, Dean had little success in eliciting responses. Out of 286 communication opportunities he created, he had 27 responses, mostly from staff (see Table 7.1). A small number of initiations were responded to by other vocational service clients or fellow residents. Conversely, staff predominantly, and other disabled people, created 182 communication opportunities with Dean. He responded to 149 of those opportunities.

Even allowing for the fact that there were fewer observations completed in Dean's residential setting, there were marked differences in the results from these two settings. In the residential setting where staff initiations were higher and where their responses to Dean's initiations were higher, so were his responses to them. At the same time, Dean's initiations were fewer than in the vocational centre. Again, in the residential setting, interactions were on average one turn longer than in the vocational centre. The residential staff did not make as many statements that would encourage Dean to respond as those made by vocational staff (29% against 52% in the vocational setting). However, their actions, evidenced in the higher number of communication opportunities they created as well as the responses they made to Dean, clearly encouraged him to respond to them. Since he was more
successful in securing an interaction from a communication opportunity in the residential setting, he perhaps had no need to attempt to initiate interactions at the higher rate than he did in the vocational setting.

Most frequently staff in both settings interacted with Dean to give him instructions (see Figure 7.2):

obs#74 Dean is in the kitchen helping Catherine prepare dinner. Catherine says, "Put that in the fridge please." Dean walks to the fridge with the bag and then drops it on the floor. Catherine says, "That's not the fridge Dean." Dean picks it up and with Catherine's assistance, puts it in the fridge. Catherine says, "Dean shut the door please." He shuts the door and walks into the hall, turning to look at Catherine. "Come and help me put the cups away." He comes back...

![Figure 7.2: Instructions given, comments made (information transfer), social interaction and social etiquette statements made to Dean by Staff](image)

Often within these routines, particularly in the residential setting, as in the example above, there was a strong impression that Dean was using the contact with another, in this case Catherine, who was very popular
amongst all of the residents, to have social time. Dean had been observed to have the skills needed to complete many activities independently and was observed to do so when nobody was about. It is also important to note from the environmental checklist that outside of times involving the preparation or eating of food (see Figure 7.3) Dean was unlikely to be engaged in any activity at all or to be successfully interacting with another. Figure 7.2 shows that staff created few opportunities for communication that were purely social or given over to passing on information. Given that the running records indicated Dean's sociability towards others, it would not be surprising for him to use instructional times to satisfy his social needs.

Figure 7.3: Percentage of total observation time spent by Dean on activities in residential and vocational settings

Despite the lack of opportunities provided by staff for communication to occur, the environmental checklist suggests that staff in both settings were frequently in the same area as Dean. When they did interact with him, they were respectful in the use of their language and in the ways they worked with him (Appendix 4). However, they did not attempt to facilitate communication between him and others, nor did they
recognise his communication skills or that his behaviour could have a communicative function.

Staff did appear to offer choice on a frequent basis. However, as was noted in the environmental checklist, the range of choice was limited. Available choices most frequently included offers of drinks, food and toilet use. When asked, Dean used the strategies previously described to inform the inquirer of his choice. Most often it appeared that staff members did not expect a response, as they did not wait for any response from Dean before moving on to an action:

obs#56 Paula says, "Right young man, do you want to come to the loo?" She takes Dean by the hand and leads him away.

**Summary**

Dean was observed to be a person who enjoyed social contact but found close physical proximity to others somewhat problematic. He reacted positively to people who did not flood him with language, who had some low key physical contact with him and were prepared to respect his personal space.

He used facial expression and vocalisation to convey information to others along with proximity to a desired object or activity. If his communication initiations were not addressed he would use other strategies, sometimes repeating himself. His behaviours could never be described as challenging.

Few (6%) of the opportunities he created for communication at the daycentre were responded to whereas in the residential setting he received responses to 22% of his initiations. This higher level of response coupled with a high staff communication opportunity creation and longer interactions potentially resulted in less need for Dean to create communication opportunities in the residential setting than at the vocational daycentre.

Staff primarily interacted with Dean to give him instructions. He seemed to use a number of these interactions for social contact as well
as completing the instructions asked of him. Within the context of their interactions, staff often offered Dean choices. Usually however, staff did not wait for a response from Dean before acting on the choice they had offered. In reality therefore, Dean had few opportunities to make choices or to exercise any control over the things happening to him.

**Dean: Results Following Staff Training and the Introduction of an Augmentative Strategy**

Subsequent to staff training a further 68 observations were made of Dean and those with whom he interacted. Twenty eight observations were completed in the residential setting and the remaining 40 were completed in the vocational setting. Forty three observations had been completed in both settings (15 in the residential setting and 28 in the vocational setting) prior to phase three beginning. The remaining 25 observations were completed after Dean's augmentative strategy was introduced.

**Initiating communication opportunities**

Subsequent to staff training, the vocational staff responded to a greater percentage of Dean's initiations (See Table 7.2.2). Concurrent with this a small increase in the length of interactions also occurred. When initiated by Dean, interactions were generally longer than when staff initiated them. In phase two, this increase was also paralleled by a small decrease in their own initiations. The percentage responses that Dean made to staff initiations rose while the average rate at which he responded to these initiations per 10 minute observation did not change greatly (2.07 responses per observation in phase one as against 2.4 and 1.84 responses per observation in phases two and three).
Table 7.2: Communication Opportunities and Responses by Dean and Staff Across the Three Phases of the Study.

### Residential Setting

<table>
<thead>
<tr>
<th></th>
<th>Phase 1 (5 mths)</th>
<th>Phase 2 (5-8 mths)</th>
<th>Phase 3 (8-10 mths)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ave. Communication Opportunities by Dean per 10 minute observation</td>
<td>2.18</td>
<td>2.7</td>
<td>3.2</td>
</tr>
<tr>
<td>% Responses by staff</td>
<td>22%</td>
<td>12%</td>
<td>17%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>2.47</td>
<td>1.6</td>
<td>1.875</td>
</tr>
<tr>
<td>Ave. Communication Opportunities by Staff per 10 minute observation</td>
<td>2.78</td>
<td>3.7</td>
<td>2</td>
</tr>
<tr>
<td>% Response by Dean</td>
<td>96%</td>
<td>78%</td>
<td>71%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>2.47</td>
<td>1.3</td>
<td>1.65</td>
</tr>
<tr>
<td>% Encouragers used by staff</td>
<td>29%</td>
<td>21%</td>
<td>45%</td>
</tr>
</tbody>
</table>

### Vocational Setting

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ave. Communication Opportunities by Dean per 10 minute observation</td>
<td>4.2</td>
<td>4.25</td>
<td>3.5</td>
</tr>
<tr>
<td>% Responses by staff</td>
<td>6%</td>
<td>26%</td>
<td>24%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>1.48</td>
<td>2.2</td>
<td>1.63</td>
</tr>
<tr>
<td>Ave. Communication Opportunities by Staff per 10 minute observation</td>
<td>1.98</td>
<td>1.61</td>
<td>1.92</td>
</tr>
<tr>
<td>% Response by Dean</td>
<td>81%</td>
<td>93%</td>
<td>96%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>1.4</td>
<td>1.4</td>
<td>1.3</td>
</tr>
<tr>
<td>% Encouragers used by staff</td>
<td>52%</td>
<td>33%</td>
<td>50%</td>
</tr>
</tbody>
</table>

By contrast, the responses made by the residential staff to Dean's communication initiations actually fell by almost 50% subsequent to staff training (Table 7.2.1). However, after the introduction of an augmentative strategy in phase three, staff's responses began to climb again. A decrease in the length of interactions that were initiated by Dean and a subsequent increase towards the end of the study paralleled this staff response rate. At the same time that the residential staff responded to fewer of Dean's initiations, their own communication initiations increased and then fell as their responses to opportunities initiated by Dean began to climb again.

Discussions with the residential staff suggested that the drop in their own responses to Dean's initiations occurred as a result of their interest in identifying for themselves those strategies described in the communication profiles they received at the staff training. Given that the residential staff increased their own initiations immediately after training and then decreased them as their responses to Dean increased,
it is reasonable to suggest that they were initially interested in identifying how it was that Dean was attempting to establish interactions. In addition, this pattern in the residential setting was replicated in respect of Glenn, who, along with Dean initiated interaction at a relatively low level by comparison with the women. If staff were unfamiliar with the strategies these two men used, rather than concentrate their energies on responding to them, they could well have spent their time observing what they did. Initial results notwithstanding, staff responses to Dean began to increase in the last phase of the study.

After drops immediately subsequent to staff training, the vocational staff continued to use many statements that encouraged Dean to respond to them (e.g. "Would you like to come to the shops?", "Are you having a good day?"). At the same time, they changed the style of communication they had with Dean (Figure 7.4). They gave him fewer instructions and they engaged in more general discussion with him. Staff were also more social within interactions in that they used the interactions they had with him, which may have been for instruction giving or to assist with eating, to have general discussion or to establish a degree of social closeness.

In phase three of the study the residential staff began to use language that encouraged a response from Dean. At this time the number of instructions they gave Dean remained high but they also increased the amount of information transfer and general social interaction. Unlike their vocational colleagues, they actually reduced the number of etiquette type statements they made to Dean.
Figure 7.4: Instructions given, comments made (information transfer), social interaction and social etiquette statements made to Dean by Staff over the three phases of the study.

The reasoning behind the collection of this information was to provide a base from which a range of communication opportunities could be offered to Dean. It is worth noting that the opportunities for communicative responses to instructions and etiquette statements are likely to be fewer than those offered by information transfer and general social interaction. Therefore, while a range of opportunities for communication is essential, there are likely to be greater opportunities available if information transfer and general social interaction form a high proportion of the communication opportunities available.
If staff were seen to be offering information, engaging in general social interaction and giving fewer instructions, then, regardless of who initiated the interaction, it would be reasonable to assume that staff relationships with Dean should have changed somewhat also. The graph: "Change in the Nature of Relationships between Staff and Clients" (Figure 7.5) was created from the environmental checklist section of the same name. The seven totals in that section of the checklist were averaged in each phase and are presented in the graphs in that form (Appendix 4). Over the course of the study, a number of differences in both settings were noted. Staff increasingly used language with dean that was respectful and they time to explain to him what was happening and what he needed to do. They were seen to act as facilitators of opportunities for communication between themselves and Dean, and others and Dean, rather than simply directing what should happen by issuing instructions. In addition, staff seemed to have the expectation that Dean would respond to their communication initiations.

Figure 7.5: Relationships between Staff and Dean over the three phases of the study
It is interesting to note that this section of the environmental checklist continued to show change over the final two phases of the study. However, it should be noted that the development of positive relationships between staff and Dean in the vocational setting was less evident than in the residential setting.

Of interest is the point that the development of positive relationships between Dean and the residential staff occurred subsequent to staff training when staff response to the communication opportunities made by Dean had actually decreased. Concurrent with this decrease however, was a significant increase in staff created communication opportunities. Clearly the quality of the communication that took place was more important than the quantity of interaction he had with others.

**Access to activities.**

The changes in the communication opportunities described coincided with increased attempts by the vocational staff to engage Dean in the activities available in the centre (See Figure 7.6). During phase two, Dean's engaged time increased from 9% to 39% (excluding eating). In the last phase of the study his lack of involvement in activities exceeded that recorded in phase one. The drop in instruction giving in phase three (see Figure 7.4) coincided with the reduction in activity options noted in Figure 7.6. In the vocational setting, these changes were further reflected in a drop in the number of communication initiations made by Dean (see Table 7.2) and the slowing of the change in the nature of the relationship between Dean and staff in Figure 7.5.
Dean had difficulties with some of the ways that people tried to interact with him. While acknowledging that the establishment of relationships with him was not easy, vocational staff efforts at various times indicated that supporting him through a range of activities and interactions was however possible:

obs#85 Dean glances up at Alan as he sorts through things on the piano. He says, "Sussing things out Dean?"
Dean says, "Mm," and looks up at Alan.
Suzanne walks over, she bends down and says something to Dean.
Dean says, "Mm," stands, and walks down the hallway, he looks into the kitchen and says, "mm," as he passes.
Suzanne walks past and says, "Go and hide from her Dean."
Dean says, "Mm," and looks back to the kitchen...
Alan walks into the kitchen, Dean is still watching from the doorway, he says to Dean, "Come and help if you want Dean, put things away."
Dean stands and looks.
Alan comes back out of the kitchen and touches Dean on the shoulder, he says, "Come into the kitchen Dean."
Dean moves in and sits down.

obs#93 Dean walks into the kitchen.
Suzanne says, "Come to see what I'm doing?"
Dean looks at her.
Suzanne says, "I am making afternoon tea."
Dean walks towards her.
Suzanne says, "Where's the big jug?"
Dean looks at her and then to the fridge.
"Oh," she says, "it's round behind you."
...Suzanne says, "Do we need anything else? What about water?"
Dean looks at her and takes a step back.
Suzanne says, "Come and help." She waits quietly for a few moments.
Dean takes some steps towards her.

As time went on however, vocational staff ceased to make activities into opportunities for communication or to give Dean the time he needed to respond, or to try to interpret his behaviour:

obs#107 Louise holds a cup up to Dean's mouth.
He drinks -he doesn't attempt to hold it as he does normally.
Louise puts the cup back to his lips, he drinks again.
Louise looks away. Dean just sits...they finish. Louise takes away Dean's cup and plate, she says, "Ready, come on!"
Dean stands.
Louise says, "You pick it up, pick it up."
Dean picks his bib up off the table.
Louise says, "In the bucket, in the bucket.
Dean drops it on the floor.
They interact for some time in this vein with Dean dropping it again, putting it in the wrong place and being generally unresponsive.
(The observer noted -I think this is Dean's way of winding her up.)

Even though individual difficulties continued to affect Dean, at times the vocational staff did not provide opportunities in which communication could occur, nor did they maintain their recognition of the communicative potential in his behaviour (Figure 7.7). Clearly, without the availability of activities, there were fewer opportunities for staff to interact with Dean and without a context in which behaviour could occur, the potential to see communication in his behaviour also decreased.

At the beginning of phase three an augmentative strategy was introduced to Dean and the staff with whom he worked. It could be argued that the introduction of such a strategy prompted the vocational staff to rely exclusively on that strategy and to ignore the other things that Dean did to try to communicate.

By contrast, after a slow start, the residential staff increasingly recognised the communicative potential of Dean's behaviour:
obs#125 Dean is watching another resident get his gear ready to go to work. He stands and walks back into the hallway.
Catherine says, "Do you want to go for a ride as well, there's room in the van?"
Dean turns his back on her.
"Go to the van if you want to."
He turns his back again.
"Oh, Ok, it is warm here, stay if you want," says Catherine.
Dean walks back into the kitchen.
Catherine follows him in and turns him around so he can sit in a chair in there.
Dean sits down, "Mm" he says, looking around.

Over the course of the study the residential setting offered fewer opportunities for Dean to engage in activities than were available in the vocational setting. It is important to point out however, that while the vocational setting was funded to provide a programme offering daily activities to meet Dean's needs, no such expectation existed in the provision of residential services, consequently only a slightly increased number of daily living activities was provided in that setting. However, those activities that were available were used as opportunities for communication to occur:

obs#146 Sandra has been talking with Dean. She goes to the kitchen and opens the oven door, she says to Dean, "Come and have a look at this."
Dean looks away.
"Come here," she says.
He moves a little closer but won't take the spoon she offers him to stir. She says, "You'll eat it quick enough."
"Mm," he says.
"Yeah," she replies, "over here now. See what we have to do?"
Dean moves to the side and looks over to where Sandra has gone.
Dean's communication in phase two and phase three.

During phase two particularly, staff in the vocational setting did appear to become more aware of Dean's communication and were thus able to respond to it (Figure 7.7 and Table 7.2.2):

obs#95 Dean is sitting in the lounge watching a game with a balloon, he scrunches up his face and grinds his teeth. Louise says to him, "Ok, what's this?" Dean put his hand on his head and pulls away from Louise. "You don't really like it do you?" Dean pushes the balloon away, increasing his vocalisations. "Ok," says Louise, "you don't like it at all." Dean scrunches up his face and says, "Mm," loudly. Louise replies, "Ok I'll leave you." Dean says, "Mm," quietly.

In addition, they began to see the links between his actions and what he was wanting to convey:

obs#116 Alan is offering drinks to people. He says to Dean, "Would you like some orange juice?" Dean looks from Alan to his cup. Alan pours the juice.

Once introduced to it at the beginning of phase three, the residential setting staff quickly began to use Dean's augmentative communication strategy, the advent of which seemed to promote the recognition of the communicative potential of other behaviour (Figure 7.7). Along with the vocational staff, they had been instructed to offer Dean choices appropriate to any situation (eg. a range of feelings if he appeared unhappy, or a range of snacks) by offering two Makaton (Walker, 1991) symbols cards or the real objects and asking Dean to look at the card or item that was most appropriate to his needs, or to look straight ahead if neither option was useful.
Dean used this strategy for a short time. However, the residential staff noticed that Dean was blinking each time he made a positive choice. Instead of using cards therefore, they simply made verbal choices available to him. He would then respond either positively, by blinking, or negatively, by looking away from the person asking him. In order to initiate the use of this strategy Dean would go and stand next to the staff member with whom he wanted to interact. At other times staff would offer him choices:

obs#150 Dean is having breakfast. Catherine comes to his table and asks Dean, "Do you want chocolate or banana, she holds the packets up for him to see. He looks over at the chocolate and blinks. She says, "It was chocolate?" Dean stares at her.
She says, "Ok!" She goes to the kitchen to make the Complan. All the while she talks to Dean about body builders and the like. She returns with his drink. She gives it to him, he drinks it.

A discussion with a vocational staff member suggested that Dean had become exasperated with her when she did not understand his intention:

22/2: Dean is very definite in the use of eye pointing at times. He became exasperated with Suzanne when she did not see his eye pointing. Dean took the appropriate symbol card from her and then pushed it back into her hands.

Although the vocational staff continued to respond to Dean's initiations at a level significantly higher than they had prior to staff training, it would seem, as in the above example, that Dean was stating his intentions more clearly.

Working notes continued to be taken for a further three months after observations had been completed. These indicated that while Dean had little difficulty in using his blinking to get his needs met in the residential setting, staff in the vocational setting had a great deal of difficulty understanding his intentions. A discussion with the Manager of the vocational service noted that:

29/11: Dean (is) still difficult, not much luck with the cards or blinking, he often doesn't seem that interested.

**Summary**

Dean was a man who experienced a number of difficulties that precluded him interacting with those around him in an easily understood manner. By altering their interaction patterns beyond instruction giving to include general discussion and social interaction, and by making a range of activities available to stimulate communication, staff were able to interact with Dean very successfully using a range of strategies. These changes appeared to prompt Dean to become more definite in his communication, to take control of the use of an augmentative communication strategy and for the first time, to use easily recognisable strategies to initiate communication.
While some of these changes were observed in the vocational setting, it would seem that there were difficulties in maintaining initial positive changes in that environment. By the end of the study Dean spent up to 70% of the time during which he was observed, not engaged in any activity and the vocational staff did not continue to see the communicative potential in his behaviour. As a result, their interactions with him became fewer and shorter. By contrast, the development of Dean's communication continued in the residential setting beyond the end of the study.

**Glenn: Communication Profile**

In total 101 observations were made of Glenn and those who interacted with him over 14 weeks in the five months of the baseline phase. Sixty-nine observations were completed in the vocational daycentre and 32 in the residential setting. Observations were timed in order that a representive sample of Glenn's days, both in the vocational setting and at home were gathered. In all, at least one 10 minute observation was made for each 30 minutes of Glenn's day between 7:30 am and 7:00pm over seven days.

Glenn appeared as a very precise person, everything had its place and there was a "right" way for things to be. His room in the residential setting was very ordered and he did not like to see things out of place at the vocational daycentre. Unless he had some control over events he did not like things to happen in an unpredictable order or for people to do things out of the ordinary. His need for precision extended to clothing and a requirement for parts of clothing to be presented in specific ways. For instance he needed to have one half of his bow and one end of his shoe lace to each side of his shoe and his clothes had to be tucked in the same way each day, regardless of the item of clothing or what he was doing.

Glenn was a social person. He enjoyed the opportunity to participate in activities although he seemed to find it difficult to let people know that he wished to be included. When he was left out he often appeared upset:
obs#3 Glenn watches Allan and Jenny leave the building, he gives them a half smile. As they go he looks sad.

obs#29 A walk is mentioned by Allan, Glenn sits up straight in his chair. Other people are being assisted into their jackets. When others have moved to the door Glenn stands and goes to the door himself. He waits, presumably not to be included, he walks back and sits down.

When little is happening Glenn seemed to get lost in his thoughts, he would giggle, hum to himself and rock quietly for no apparent reason:

obs#34 Glenn is in the back room, sitting sideways in his chair, rocking, "mmm." He sits up straight and giggles, he fiddles with the velcro on his shoe. He puts his fingers in his ears, "mmm." He slouches back and giggles again.

Glenn was very slow to start in the mornings. He did not like to respond to people and he would quickly become annoyed with them if he was not left alone:

obs#37 Jane says, "Would you come and get your togs out of your bag for swimming?" Glenn gets his togs. Jane says, "Oh, they are new ones Glenn, lovely." Suzanne joins in, "Lovely Glenn." Glenn flaps his arms and sits down again, he sits stiffly, seems to be on edge. Suzanne asks, "Would you be interested in looking at the newspaper about the festival." Glenn lets out a high pitched scream, "Eeee," he quickly rubs his fingers on either side of his neck. "Ok," says Suzanne as she leaves.

Glenn did not much like people who were demanding or who flooded him with too much language. He preferred to be "jollied along". He would make it quite clear to people when he did not want anything to do with them:

obs#60 Suzanne has been trying to get Glenn to eat his lunch, he obviously isn't hungry. She leaves and then walks back into the room. Glenn puts his hands up over his ears and looks directly at her.

At times noise was a real problem for Glenn. He became especially upset by other people screaming or yelling. At these times he would rock, breathe very heavily, block his ears, look very pained and if he could, would leave the room. However, during music sessions, he would rock in time, close his eyes and bang on a tambourine. Whenever there
was noise though, and whatever his response, he seemed to find it
difficult to engage with others:

obs#1 A video of a clapping game is on. Staff prompt Glenn to participate
twice to which he responds then stops.
Staff prompt several more times and he ignores them.
He begins to look quite agitated, looks pained, rocks, breathes heavily.
Staff prompt him to participate.
He sits very still, doesn't respond to them and then leaves.

In some contexts Glenn had very good fine motor skills. He completed
fine jigsaw puzzles with ease and he ate very carefully. However,
outside of these behaviours his hands and arms appeared to have little
strength. His hands particularly were often floppy making it difficult
for him to use things like keyboards. With some assistance he could
point to objects and symbols.

**How did Glenn communicate with others?**

In creating communication opportunities Glenn would attempt to make
eye contact with people and he would eye point at the things he wanted:

obs#68 Glenn is standing near Janice.
She asks, "What do you want Glenn?"
He stares at the food on the table.

Along with eye contact he would also go and stand in front of people,
use body positioning generally and use a physical prompt or a real
object to have his needs met:

obs#9 Glenn stands and walks over to me. He puts his foot up on the table.
He is looking right at me and making a screeching sound.
He takes my hand and gestures towards his laces.
I tie it tighter, he puts the other foot up, takes my hand and puts it on his
shoes.
I tie the other lace tighter.
He goes and sits down again.

obs#84 I don't think he wants to be observed as he looks straight at me,
stands up and leaves the room.

obs#11 Jane says, "What would you like? More?".
Glenn holds up his plate
Jane says, "More please!"
Glenn makes a noise.

Glenn also made good use of facial expression to show displeasure,
thanks and avoidance:
obs#70  Paul brings Glenn his plate, he begins eating.
Mary says, "there aren't enough chips left, give some back guys."
Glenn glares at Mary.
Sandra says, "Glenn just gave you a filthy look Mary."

obs#83  Paul takes Glenn's plate to him.
Glenn smiles at Paul then looks at his plate.

obs#59  Suzanne says, "Glenn do you want to come and finish your picture?"
Glenn sits up and puts his hands over his face scrunching his eyes closed.
"Come on, you remember, the one with the crayons."
Glenn sits with his hands over his face and his eyes squeezed closed.
"Come on, you need to do it in the other room."
He doesn't move.
Suzanne says, "Come on," as she moves away
Glenn sits up a little
"Come on," she says, "Pretending to be asleep."
He stares straight ahead.
"You need to finish it for your Mum and Dad."
He squeals at her.
"Come on, I'm waiting."
Glenn sighs, stands and follows.

At times, Glenn appeared to try to ignore people:

obs#15  Denise asks, "Will you help me with the table Glenn?"
He walks out of the room...
Suzanne follows and asks, "Do you want to come and finish the decorations we have been making?"
Glenn moves off down the hall.
Suzanne tries to divert him, "In here Glenn, come in here and help me."
Glenn walks off to another room.
Suzanne follows, "Are you going to help me, do you want to help do this?"
Glenn is swaying from side to side, swinging his arms and hitting himself on the bottom. He is making high pitched and loud "mmm" noises.
"Look Glenn look," says Suzanne
Glenn moves away giggling...

As in the previous example, there were times when Glenn seemed to enjoy the exercise of annoying people:

obs#15  Rebecca, another client at the daycentre is in a very bad mood...
Glenn sits down at the afternoon tea table with her and with James. He pours himself some tea.
Rebecca says, "Don't take all the tea."
Glenn begins to eat with both hands held up near his ears.
"That's right Glenn, take all the tea won't you!"
Glenn remains eating.
"You drank all my tea!"
He glances over at Rebecca and reaches out for more tea.
"No, no more," she says, hitting his hand.
He pours the tea and sits drinking it while watching her. He is smiling.
Glenn finishes his tea, stands and takes up his plate and cup. He walks away laughing as Rebecca calls after him, "You dirty pig you are Glenn!"
He puts his plate and cup down on the trolley and walks up the hall, still laughing.

Glenn also used behaviours commonly described as stereotypic which could have provided clues as to his state at that time. When left to himself he would often rock, either sitting or standing, shift his weight from side to side and move from one leg to the other. Often he would slap his buttock with the opposite hand. Glenn also used these same behaviours subsequent to being involved in an activity. At these times, his rocking was quiet and slow. He often smiled at the same time.

Glenn would also rock at times when others were making a great deal of noise, or if there was conflict between people. At these times he would use rocking and finger fluttering:

obs#9 Vivienne is yelling at Daman, Glenn looks on.  
As Vivienne's yelling and banging at Daman increases so does Glenn's rocking.  
As things calm down, so does Glenn's rocking, he flutters his fingers on the side of his face.

He would also use these behaviours to demonstrate his own agitation, often with some vocalisation or floor stamping:

obs#48 Glenn is sitting, rocking and sighing, he sits up straight, flicks his fingers on his face and squeals.  
"Is it that bad Glenn?" asks Jane.  
Glenn looks at Jane, raises both feet off the floor and stamps them down.

Glenn showed that he had very good understanding of instructions. Sixty percent of all interactions with Glenn were instruction giving (Figure 7.9), and he generally did that which was asked of him:

obs#2 Jane says, "Glenn can I get you to move if that's ok, and can you help me put the towels away."
Glenn stands, moves the chair and opens the cupboard.
Jane says, "You're the one," she passes him some towels.
Glenn takes them and places them in the cupboard, looking for extra space.
Jane says, "There is more space down there."
He takes the towels and places them in the cupboard.
"Great, thank you," says Jane.

Glenn also had excellent visual orientation skills. His eye for detail was remarkable. At times at the daycentre he would complete jigsaw puzzles that had been spread out for him. Interestingly, he never chose to complete a jigsaw puzzle that was offered to him. Generally staff
would spread a puzzle out prior to him entering the room in which they were kept:

obs#2 He is completing a puzzle with Jane who has spread it out on the table. The puzzle has about 200 pieces and is of New Zealand stamps. Glenn looks intently at the pieces, he is concentrating, flapping his hands at the same time. Each piece he picks up, he places correctly.

Although Glenn demonstrated that he was very capable of independent action, like Dean however, he would often wait till he was told:

obs#5 Glenn sits at the afternoon tea table waving his head around. Jane says, "Come and get your cup Glenn. If you want it come and get it." Glenn stands, walks to the trolley, gets a cup and returns to his seat.

If nobody was about Glenn would do things for himself:

obs#19 Glenn is sitting at the tea table, rocking and waving his hands. He stands, walks to the trolley, picks up a cup and returns to his seat.

On other occasions he seemed to be dependent on the support of staff to assist in initiating and completing actions:

obs#60 Glenn is at the lunch table. He has his elbows on the table and his head in his hands, he is staring at the table. He says, "Eee," and rubs his fingers up and down his neck. He goes back to sitting with his head in his hands staring at the table. Five minutes pass before anybody notices that he has no lunch in front of him.

**How successful were Glenn's communication initiations?**

Although he used a number of strategies to initiate communication Glenn had little success in getting staff and others to respond to those initiations. Of the 276 opportunities he created for communication to occur, he had 32 responses. The vast majority of these responses were from staff. Around food particularly, a few of Glenn's initiations were responded to by other clients or residents. An analysis of the communication opportunities created by Glenn and the responses gained in each setting is shown in Table 7.3.
### Table 7.3: Communication opportunities by Glenn and Staff in the residential and vocational setting in Phase One

<table>
<thead>
<tr>
<th></th>
<th>Res</th>
<th>Voc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ave. Comm. Opportunities by Glenn per 10 minute observation</td>
<td>2.04</td>
<td>3.04</td>
</tr>
<tr>
<td>% Responses by staff</td>
<td>18%</td>
<td>4%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Ave. Communication Opportunities by Staff per 10 minute observation</td>
<td>0.78</td>
<td>1.63</td>
</tr>
<tr>
<td>% Response by Glenn</td>
<td>89%</td>
<td>79%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>1.3</td>
<td>1.6</td>
</tr>
<tr>
<td>% Encouragers used by staff</td>
<td>29%</td>
<td>64%</td>
</tr>
</tbody>
</table>

Staff and a small number of other clients created 138 communication opportunities with Glenn, approximately half of the number Glenn himself created. He responded to 102 of these initiations. It should be noted that Glenn would sometimes not respond to the inquiries of others which may have indicated a lack of interest, a desire for some time alone, or some sensory difficulty. In the daycentre, staff would often persevere in trying to engage Glenn's interest despite his non response:

obs#32 Denise has opened a window beside where Glenn is sitting...
She asks Glenn, "Would you like to look at the pictures in a book?"
He looks at her.
She asks again and he looks straight at her face.
Denise opens the book and looking at a picture says, "This is incredible isn't it?"
Glenn looks at the picture.
"Do you see the water?" she asks.
Glenn looks away from the book and stares straight ahead.
Denise turns a page and says, "Look at the old buildings, they are so high?"
Glenn continues to stare straight ahead
Turning a page she says, "Oh there are more of them."
He stares straight ahead...This monologue goes on for another eight minutes,
Denise continues to try to engage Glenn, he remains impassive.

Consequently, Glenn's non response to staff initiations, which while they were potential responses to their initiations, depressed Glenn's overall response rate to staff initiations in the daycentre. Staff in the residential setting seemed to be well tuned in to his communication behaviour:

obs#68 There is a picnic lunch going on, Glenn is sitting on a rug, he gets up and gets a drink from Paula.
Mary asks, "Who else wants a banana? Glenn are you waiting there?"
He reaches forward and takes a banana. Standing back he eats this and finishes his drink. He moves to stand in front of Mary. "Glenn?"

He takes another banana and once finished he walks around the yard. Janice says to him, "What do you want Glenn?"

He doesn't look at her but stares at the table and sits down. Paula says, "What are you smiling at Glenn. Just help yourself."

After a moment he gets up and hovers at the table. Janice says, "Just help yourself."

He takes a biscuit.

In the vocational setting both Glenn's and the staff's initiations were relatively high at 3.04 and 1.63 initiations per observation respectively. Interactions resulting from the opportunities created by Glenn were few (4% of the opportunities he created) and when they did occur they were on average 1.6 turns long. Staff were quite encouraging in the way that they used language with Glenn and he responded to 79% of their initiations. These interactions were on average 1.6 turns each in length.

By comparison, in the residential setting staff initiations were less than one per observation. Glenn responded to 96% of these initiations. It could be argued that the infrequency of these initiations meant that Glenn was more motivated to respond. However, reference to Figure 7.8 indicates that there were few demands on Glenn in the residential setting. A quarter of his time was spent in situations involving food and two thirds of his time was free. Outside of the times when food was present there were almost no interactions between Glenn and staff, despite any initiations he may have made. At meal times staff were always on hand but because the primary purpose of the activity was eating, for which Glenn did not require assistance or encouragement, interactions tended to be few and brief.

The communication opportunities that Glenn created in the residential setting were lower than in the daycentre (2.04 per observation as compared to 3.04 per observation) and staff responded to 18% of these initiations. Regardless of who initiated interactions, in the residential setting each interaction lasted fewer than two turns.
The demands on Glenn to participate in activities were higher in the vocational daycentre than in the residential setting (Figure 7.8). He still had a great deal of time to himself but almost 20% of his day was spent engaged in activities of some sort (identified as: "Other" in Figure 7.8). As a result of the difficulties that Glenn experienced with noise and his reluctance to be involved in some activities, staff initiated interactions focused on engaging him in activities and keeping him focused on them. Of all of the interactions Glenn had in the vocational centre, 62% were related to staff giving instructions (see Figure 7.9). In the residential setting, the activities in which Glenn participated were mostly related to food. Almost no other activity was available during the course of the observations. It is significant that like Dean, Glenn did not engage in any activities for the bulk of the time in which he was observed. At these times there were few opportunities for interaction created by others and there were few occasions on which Glenn could create opportunities with others.
The results from the activities section of the environmental checklist (Appendix 4) confirm the lack of opportunity for Glenn to participate in activities. While he had the choice to engage or not in activities to a slightly larger extent than did Dean, there were still few activity options available to him. However, those that were available were more likely to interest him and to stimulate the potential for communication than was the case for Dean. It would seem though, that the differences noted between Glenn and Dean were as a result of their individual strengths and needs. Glenn, like Dean, received little communication about activities from staff and there was very little support available to Glenn when and if he requested it.

Staff in the residential setting did not give Glenn instructions to the same extent as they did in the vocational setting (Figure 7.9). As has already been noted, Glenn was relatively independent in many of the things he did in the residential setting. Not surprisingly, there would be less need for him to be instructed in the completion of activities (mostly associated with food) in the residential setting. Interestingly, in the absence of a perceived need to instruct, the residential staff engaged in significant amounts of information transfer and general social interaction with Glenn.

Staff in the vocational setting continued the pattern they had established in their interactions with Dean where instruction giving was their prime interactive strategy (62% of all interactions involved instruction giving in this setting). However, unlike Dean, Glenn was the recipient of information transfer and generally socially interactive communication for 40% of the total observation time.
Figure 7.9: Instructions given, comments made (information transfer), social interaction and social etiquette statements made to Glenn by Staff

These results would be expected to parallel those from the section of the environmental checklist: "Change in the Nature of Relationships between Staff and Clients" (Appendix 4). Glenn's interactions with staff in both settings were at least as positive as they had been with Dean. There were however, few other differences between them. Staff in the residential setting were slightly more inclined to see Glenn's behaviour as having a communication function than they were with Dean (12% of observations showed staff responding to Glenn's behaviour while there were no recorded staff responses to Dean's behaviour) (see Figures 7.7 and 7.13). The vocational staff attempted to involve Glenn in interactions slightly more than they did Dean but their interaction strategies were no more appropriate to Glenn's needs than they were to Dean's and they did not appear to expect any responses to their initiations.
Summary.

Glenn used a number of strategies to initiate and maintain interactions with others, including eye contact, facial expression, pointing, body position and physical prompts to get his needs met. He also seemed to have some reliance on environmental prompts to remind him what to do. The most common examples of this were his apparent need to go to the tea table before he went to get his cup from the trolley and his general difficulties in initiating activities. In addition, Glenn also used a number of stereotypic behaviours which provided clues to his mood at the time. To this end he would rock, flap his hands, stroke his neck and hit himself.

Glenn demonstrated that he had an understanding of the world around him in that he followed complex instructions without difficulty. He also showed an ability to complete multi-step tasks with excellent visual orientation skills.

Although he was a social person, there were situations and people that Glenn found difficult. He appeared to have problems around excessive noise and avoided people who were either noisy or who flooded him with a great deal of language. He avoided these people when possible; when he could not he resorted to blocking his ears. He also appeared to use this strategy to show that he was ignoring a person. Similarly he would stare intently off into the distance when he did not wish to interact with people.

As with Dean, staff responded infrequently to the initiations that Glenn made. Conversely, he responded to a large number of the initiations of others despite these being a great deal less frequent than the communication opportunities he created. In his residential setting, outside of situations involving food, staff interacted with Glenn very little. At his daycentre, where there were higher expectations of his participation, he tended to withdraw from and ignore those people who made what seemed to be excessive demands.
Glenn: Results following staff training and the introduction of the augmentative strategy.

Subsequent to staff training a further 57 observations were made of Glenn and those with whom he interacted. Thirty six observations were completed in the vocational setting and the remaining 21 were completed in the residential setting. Thirty four observations were completed in both settings (23 in the vocational setting and 11 in the residential setting) during phase two. The remaining 23 observations were completed during phase three.

Initiating communication opportunities.

Staff working in Glenn's residential setting significantly increased the communication opportunities that they created with him as well as slightly increasing the length of such interactions (see Table 7.4.1). Glenn continued to respond to these interactions at a high rate. Subsequent to the introduction of Glenn's augmentative communication strategy, the residential staff continued to create communication opportunities with Glenn at this level.

As was the case with Dean, the increase recorded in the residential staff's communication initiations was matched with a decrease, although small, in their responses to those opportunities created by Glenn during phase two. Once Glenn had access to an augmentative communication strategy in phase three, residential staff responses to the communication opportunities he created increased to 45%. However, running records show that few of the opportunities created by Glenn in the final phase were with his augmentative strategy. The level at which Glenn created communication opportunities remained consistent across the three phases of the study.

Subsequent to staff training, the vocational staff increased their responses to Glenn's initiations (see Table 7.4.2). This increase continued to grow across the remainder of the study. However, the length of the interactions that arose from opportunities created by Glenn decreased in length.
Those communication opportunities created by the vocational staff remained relatively constant across the three phases of the study. The length of the interactions they created followed the same pattern, as did Glenn's responses to them.

Table 7.4: Communication opportunities and responses by Glenn and Staff across the three phases of the study.

<table>
<thead>
<tr>
<th></th>
<th>Phase 1 5 mths</th>
<th>Phase 2 5-8 mths</th>
<th>Phase 3 8-10 mths</th>
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</thead>
<tbody>
<tr>
<td><strong>7.4.1 Residential Setting</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ave. Comm. Opportunities by Glenn per 10 minute observation</td>
<td>2.04</td>
<td>2.58</td>
<td>2</td>
</tr>
<tr>
<td>% Responses by staff</td>
<td>18%</td>
<td>13%</td>
<td>45%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>1.6</td>
<td>1.75</td>
<td>1.1</td>
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<tr>
<td>Ave. Communication Opportunities by Staff per 10 minute observation</td>
<td>0.78</td>
<td>2.25</td>
<td>2</td>
</tr>
<tr>
<td>% Response by Glenn</td>
<td>89%</td>
<td>88%</td>
<td>95%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>1.3</td>
<td>1.87</td>
<td>1.84</td>
</tr>
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<td>% Encouragers used by staff</td>
<td>32%</td>
<td>29%</td>
<td>74%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7.4.2 Vocational Setting</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ave. Comm. Opportunities by Glenn per 10 minute observation</td>
<td>3.04</td>
<td>2.59</td>
<td>2.6</td>
</tr>
<tr>
<td>% Responses by staff</td>
<td>4%</td>
<td>15.7%</td>
<td>17.6%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>3.05</td>
<td>1.8</td>
<td>2.5</td>
</tr>
<tr>
<td>Ave. Communication Opportunities by Staff per 10 minute observation</td>
<td>1.63</td>
<td>1.77</td>
<td>1.07</td>
</tr>
<tr>
<td>% Response by Glenn</td>
<td>79%</td>
<td>79.4%</td>
<td>71.4%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>1.6</td>
<td>2.09</td>
<td>1.4</td>
</tr>
<tr>
<td>% Encouragers used by staff</td>
<td>64%</td>
<td>44%</td>
<td>50%</td>
</tr>
</tbody>
</table>

At the outset of the study the vocational staff were very encouraging in the language that they used with Glenn. As was the case with Dean, they ceased to be quite so encouraging after staff training. During phases two and three, the vocational staff changed the style of communication that they used with Glenn (Figure 7.10). They became considerably less directive and gave Glenn a great deal more information about the things happening in the daycentre. Interestingly, the vocational staff made few changes to the amount of purely social interaction that they had with Glenn after staff training.

In the final part of the study the residential staff became very encouraging in the language that they used with Glenn but fewer
interactions with Glenn were purely social. They also became a great deal less directive in their communication with him. Glenn was seen to be considerably more independent than his peers and in need of less direction. This was confirmed in the communication profiles prepared for both the vocational and residential staff. The degree to which he was given directions in the residential setting was already low by comparison with the number of instructions given to Dean, but even this rate dropped significantly. It is important to note also that Glenn's augmentative communication strategy (facilitated communication with text) was significantly more sophisticated in its potential to convey complex information than were his peer's strategies. In the third phase the potential for him to make decisions for himself on the basis of information given to him by staff, and then to have those decisions easily recognised could also account for the decrease in instruction giving and the concurrent increases in information transfer.

**Figure 7.10:** Instructions given, comments made (information transfer), social interaction and social etiquette statements made to Glenn by Staff over the three phases of the study

![Graph showing percentage of interactions for Phase One, Phase Two, and Phase Three for both residential and vocational settings.](image)
Changes in the intent behind the communication initiated by both the residential staff and the vocational staff were mirrored in the section: "Changes in the Nature of Relationships between Staff and Clients" of the environmental checklist (Figure 7.11 and Appendix 4). Staff in both settings were seen to be in the same areas as Glenn a great deal more than they had been prior to staff training. In particular the residential staff were seen to be considerably more positive in the ways that they spoke to him and in their general behaviour towards him. Consistent with the coded observation rates, residential staff initiated considerably more interaction with Glenn and their interactions were delivered in ways that were seen to be appropriate to his needs (as defined in the communication profiles). By contrast, this section of the environmental checklist did not record any extra instances of the vocational staff initiating any more interactions or using strategies appropriate to Glenn's needs. This finding was consistent with that achieved using the coded observational categories.

The previous results notwithstanding, more relationships between the staff in both settings and Glenn were developed in phases two and three than during the baseline phase (see Figure 7.11). As was the case with Dean, the result achieved by the residential staff was greater than that of the vocational staff. Residential staff-initiated communications with Glenn tended to be open ended and staff tended to wait for him to respond to their initiations. Where the residential staff tended to become more aware of Glenn's strengths and choices, their vocational colleagues continued to have some difficulties identifying those aspects of Glenn's behaviour.
**Access to activities.**

The changes in the communication opportunities described previously coincided with attempts to involve Glenn in more activities than in the first phase of the study (Figure 7.12). Included in the range of activities were those described as "other" and "food", which along with eating, included food preparation activities, hence the changes in those results. In the residential setting, Glenn initially became involved in the preparation of meals but was later given tasks, still of a domestic nature, that involved him elsewhere in that setting.
Immediately after staff training, the vocational staff involved Glenn in a greater variety of activities but as was the case with Dean, this involvement did not last beyond the end of phase two. Whether all of the activities that were available stimulated Glenn's interest is also questionable and could have contributed to the reduction in the availability of activities later in the study:

obs#102 Alan says to Glenn, "We might get a game going Glenn. What about it?"
Glenn finger flutters (flicks his fingers against the side of his face). He watches Alan sort out the table.
Jane walks in. Glenn looks up and she says to him, "Going to play a game Glenn?"
Glenn looks straight ahead
Alan says, "Now Glenn, deal or shuffle?"
Glenn finger flutters.
Alan says, "Which one do you want to choose?"
Glenn looks away and finger flutters.
Alan asks twice more, Glenn gets up and walks off.
"Ok then, not interested!"
When Glenn was interested in activities that were taking place, he participated in activities to a greater extent than he had previously been observed to:

obs#135 Glenn is at the table in the kitchen (in the vocational setting). Gwen says to him, "I'll get you to mix this." Glenn remains sitting with his hands over his face. "Glenn," says Gwen, "Will you mix this?" Glenn picks up the spoon and mixes as Gwen adds ingredients. Glenn is intently watching what he is doing as he continues mixing. Gwen measures out the milk. Glenn turns to watch. "Will you add this?" He takes the milk and pours it from a height. "That's right." Glenn begins to mix again. Gwen takes the bowl for a moment, Glenn watches her closely. She returns the bowl to him, he adds more milk and continues mixing. He says, "Mm," while mixing. They add further ingredients and mix, Gwen says, "That's great." Glenn stops. She brings a pie dish and Glenn pours in the mixture. Gwen then shows him how to arrange vegetables on the top of the pie. Glenn very carefully repeats what she has done. "Now," says Gwen, "shall we put it in the oven?" They both pick up the dish and walk to the oven.

It is important to note that the vocational centre had responsibility for the provision of programmes aimed at developing Glenn's skills. The prime concern in the residential setting however, was the delivery of residential services, which included the provision of opportunities for domestic activities. Given the difference in role, it is of real concern that there were few differences in the provision of activities between the vocational and the residential settings.

Although there was initially little change in the availability of activities in the residential setting, those that were available were used as opportunities to make choices, albeit limited:

obs#145 Glenn is making his lunch with Andrea. She says to him, "What do you want? What do you need now?" Glenn looks at her. "You go and get it." She points to the fridge. Glenn returns with the margarine and spreads his bread. "Right, good," says Andrea. Glenn looks at her. "What now?" He covers his ears. Andrea says, "Glenn." She goes to the pantry, he follows her. "Peanut butter...?" Andrea tells Glenn about all of the choices available.
He returns with a jar and spreads his bread. They finish making his sandwiches and Glenn eats another slice of bread he has prepared. Once he has finished Andrea says, "What biscuits do you want? Take something out of the tin there."
He chooses two cakes and wraps them. He turns to the fruit. Andrea says, "You can take two pieces."
He returns with one piece. Andrea says, "You can have two pieces."
Glenn takes another "Now chips."
Glenn turns to Mary who is holding up two bags. Glenn reaches for them both. No Glenn, you'll have to choose," says Andrea
Glenn chooses one of the flavours, takes it from Mary and puts it in his box.

Residential staff also became more flexible concerning when tasks needed to be completed:

obs#146 Catherine says to Glenn, "Would you put these away in the garage for me?"
Glenn is just sitting down, he ignores her. Catherine says, "I'll put them down here till you are ready." She walks away. Glenn covers his eyes and rocks. Some time later he gets up, picks up the milk bottles and walks out with them. "Thanks, that's wonderful," Catherine responds

The degree to which Glenn was prepared to engage in activities did make a difference to the style of interaction that the vocational staff had with him. As he exercised more choice about the things he wanted to do, they seemed to require more from him. In this case, speech:

obs#118 It is lunch time and Glenn has been eating a cooked lunch. Gwen walks up to him and says, "Would you like some more?"
Glenn raises his plate and smiles at Gwen. "Ok," she refills his plate and holding it in front of him says, "thank you?"
Glenn makes a verbal approximation of thank you, he takes the plate and eats.

**Glenn's communication in phase two and phase three.**

Staff in both settings increasingly recognised the communicative potential in Glenn's behaviour (Figure 7.13). It was not surprising that the residential staff, who had changed their practice to become much more responsive to Glenn than their vocational colleagues, recognised a great deal more of his behaviour as having communication potential. Unlike many of her vocational colleagues, Suzanne had little difficulty in recognising some of Glenn's behaviour as being communicative:
Glenn is at the pool, he looks over at a group of people and laughs. Suzanne says, "Don't splash people Glenn!" Glenn refrains, he rolls onto his back and kicks away with large splashy kicks. Suzanne goes over to him. Glenn begins splashing her with his hands. She calls out to him and he rolls onto his stomach and kicks away. He stops as he sees two water joggers. Suzanne calls out, "No Glenn!" He splashes them.

Figure 7.13: Staff recognition of the communicative potential of Glenn's behaviour over the three phases of the study

For his part, Glenn did seem to begin to use numbers of strategies that were more obvious in their intent than those strategies he had previously used:

Glenn has been batting a balloon around with Gwen for quite some time. Gwen bats the balloon at Glenn, he grabs it and stands on it. He then picks up the pieces, goes to the toilet and flushes them away. He returns. Gwen says to him, "Naughty Glenn!" He sits down. ...Some time later Glenn goes through to afternoon tea. Gwen says to him, "Oh, so you're going to grace us with your presence for afternoon tea?" He walks straight past her without looking at her.
The augmentative communication strategy that Glenn was introduced to was facilitated communication with text. Glenn began to use this strategy with key members of staff in both settings (Jane in the vocational setting and Catherine in the residential setting). These staff, along with myself, introduced other members of staff to the strategy. Glenn initially used a laminated letter board from which he spelt the phrases that made up his communications. He did this with the provision of physical support behind his wrist and a great deal of emotional support. Glenn quickly adopted the communication strategy and began using a "Canon Communicator" which he carried between the residential and vocational settings daily. Whenever staff recognised that he wished to communicate with them, they would ask him to get the "Canon", which he generally did. Glenn noted on occasions that:

17/8  "it freel very cgood to tailk"

He did find the process of communicating with a letterboard or "Canon" with facilitation, very difficult at times:

17/8  "Glenn goes giddy with all this talking help Glenn to grow right trevor time ies short"

He also noted that:

17/8  "Glenn stress heaav (heavy?)"

There were other times when staff wished to get his opinion or to interact with him when he was not so interested. At these times he simply refused:

Jane has asked Glenn to get the Canon.
Glenn is sitting stroking his face and neck.
Jane says, "Get the Canon please."
He blocks his ears and closes his eyes.
Jane says, "Go on sport."
Glenn squeals and flicks his face, rearranges his shoe laces, flicks his face again and breathes very heavily.
Jane says, "Go and get it."
He looks up, strokes his neck, breathing very heavily. He stands.
Jane touches his shoulder and asks him to get the Canon again.
He pushes her hand away and squeals at her. He blocks his ears.

Glenn's use of facilitated communication with text fluctuated. At times he insisted on it but at other times he would use it very little. During
one of these episodes he became very agitated and on one occasion he hit Gwen while they were out shopping. He later spoke with Jane:

Jane asked Glenn why he had not used Facilitated Communication for a number of days, he replied that he had, "been extra tired." He also said, "ages to talk," which Jane had interpreted as meaning that it took a great deal of time and concentration for communication to take place.

She also asked Glenn why he had hit Gwen. He replied, "she couldn't find the next shop." Glenn was unable to explain this event in more detail.

In fact, Gwen had forgotten an item that she needed from a shop they had already visited. Staff had previously learned that Glenn could not cope with a sudden change to a planned routine. Gwen said that she felt that now he was using Facilitated Communication, it would be alright to change the expected routine.

In his residential setting Glenn began to take the "Canon" to members of staff if he wanted to communicate with them. By this time many of the staff were using Facilitated Communication with Glenn although others were not quite so confident and preferred other members of staff to act as facilitators. Glenn seemed happy with this arrangement:

obs#156 Andrea says to Glenn, "So, when you use your Canon next I'll ask you whether you want to go to rock and roll."
Glenn looks up, lots of eye contact and smiles at Andrea, he sits very close to her.
"I'll get whoever you are working with to ask you with the Canon."
Again, Glenn smiles and looks at Andrea.

Glenn continues to communicate with the use of Facilitated Communication. He will however, not use it with everybody with whom he has contact. In the vocational setting Jane seems to be his prime facilitator and in the residential setting he will work with Catherine, Sandra and Andrea. During a holiday with his parents Glenn and his father used the "Canon" together for daily communication. Glenn's father reported to Sandra that Glenn had requested:

29/11 "beer please,"

when asked if he would like a pre dinner drink with him and his mother.

It was interesting to note that Glenn chose to communicate much more frequently in the residential setting than at the vocational centre. In
addition, while he continued to use the "Canon" for a time in the residential setting, he preferred to use the laminated letter board while in the vocational setting. Working notes indicated that in the vocational setting he was asked about things that had happened and what he thought about things a great deal more than in the residential setting where people seemed to make Facilitated Communication simply a part of the typical day:

20/12 From the vocational setting. Glenn was still using the laminated board instead of the "Canon". Jane said she last asked him how he felt about swimming and what had happened there but Glenn hadn't said much (interesting to note the quite abstract questions that seem to be asked of Glenn at the vocational setting).

Glenn continued to get agitated at times if his routine was interrupted. On one occasion he hit Catherine and on another, Andrea. Subsequent to both of these incidents Glenn avoided Catherine and Andrea for a time and would not use Facilitated Communication with them. They kept offering him the strategy and after a time his communication with them resumed. They found however, that he would only use this communication strategy when there were no others around and when things were quiet. In the vocational setting Glenn's use of Facilitated Communication, as already noted, remained somewhat erratic. The manager of that service also noted that;

20/12 ...he felt guilty about not doing more with communication but lots of his time was taken up with ... Looking back over the year he could definitely see a great deal of progress with the communication skills of the four.

Nonetheless, Glenn has persevered with his communication in the vocational setting. He would put his hand out to staff for physical support to make choices from lists and when it was quiet he will sometimes seek Jane out for discussion.

Summary.

Glenn was seen by those with whom he worked as an able person. However, he experienced a number of difficulties that precluded his communication being easily understood by others. Once they had had some training, staff in the settings in which Glenn lived and worked, to some extent learned to recognise the communication potential in his
behaviour. They increased the opportunities available for communication to take place by increasing the amount that they responded to his initiations and by increasing the communication opportunities they created with him. They also became less directive and more encouraging of communication and by providing a greater range of activities which stimulated the potential for communication to occur.

Particularly in the vocational setting, staff found it difficult to maintain a range of activities that would interest Glenn. As a consequence, their relationships with him and their recognition of the communicative potential of his behaviour suffered. The manager of this service later commented that despite the study, communication had not had the priority it deserved in his service.

Once Glenn had access to an augmentative communication strategy, he was much more inclined to use it in his residential setting where a greater number of choices and options was available to him. The responses made by residential staff to Glenn's communication more than trebled during this final phase of the study whereas vocational staff increased their responses to Glenn by 2% only. Clearly, Glenn's use of his augmentative strategy and communication generally was both aided and handicapped by those around him. His skills continued to develop but his success in communicating with others remained dependent, to an extent, on the supports that others were able to provide for him.

**Helen: Communication Profile**

During the baseline phase a total of 103 observations of Helen and those people with whom she interacted, each of ten minutes duration over 13 weeks in a five month period were completed. At the vocational daycentre 68 observations were completed and 35 observations were completed in Helen's residential setting. In all, at least one 10-minute observation was completed for each half hour of Helen's day between 7:30am and 7:00pm, each day of the week.

Helen was described by those who cared for her as being a woman with "an eye for the men". Our observations did not support that premise
but they did show very clearly that Helen was strongly motivated by social contact with others and by a desire to know what was going on around her:

obs#4 Jenny (another client) leaves the room, talking to herself as she goes. Helen cranes her neck to see...
Glenn laughs, Helen strains to see at what ...

While Helen was strongly motivated by contact with other people, her responses to them varied. At times she was quite active in her participation:

obs#13 Suzanne says to Helen, "What do you think? It smells like jasmine."
Helen smiles and smells the flowers.
Gwen says, "Is that nice?"
Helen smells again.
Suzanne then says, "Smell the lavender."
Helen leans forward and smells it.

There were other times however, when she did not appear to respond to the initiations of others:

obs#43 Jane and Helen and John (another client) are out walking.
Jane says, "It's a lovely day isn't it Helen."
Helen stares straight ahead.
Jane says, "Dean will be back tomorrow."
Helen continues looking straight ahead.
Jane says, "This part of the road is very shady."
Helen looks ahead
"Do you like these flowers Helen?"
No response from Helen...

Helen possibly preferred undivided attention:

obs#35 Helen is having lunch, Suzanne is assisting. She is cutting up a sandwich and placing bite sized pieces in Helen's hand which she then moves to her mouth.
Helen looks up at Suzanne as she puts the sandwich in her fingers.
Suzanne smiles back and gives Helen a drink.
Helen looks up again and Suzanne smiles back.
Suzanne turns and talks to another staff member.
Helen rocks sharply.
Suzanne puts her hand on Helen's head and gives her a drink, she continues to talk.
Helen grinds her teeth.

Helen had difficulties with movement. She found getting into chairs difficult but she could sit down unaided. However she generally required assistance to get out of chairs:
obs#9 Alan takes Helen's hand, "Come on, that's the story, come on."
Helen remains seated.
"Come on Helen, let's go."
Helen stays sitting.
Alan gets behind her and pulls her up.
She stands.

She had very limited use of her hands. In the vocational setting she was usually assisted in eating by a member of staff. Helen's sandwiches were broken into bite sized pieces which were then either placed directly into her mouth or into her hand which was then moved to her mouth:

obs#1 A staff member says to Helen, "Would you like a sandwich?" She holds the sandwich in front of her.
She bites.
"Would you like another bite?" She holds the sandwich out for her.
Helen bites.

In the residential setting however, Helen took more control of eating:

obs#72 Helen is eating at the dinner table.
Sandra walks past Helen, she takes Helen's hand and assists her to fill her spoon.
Helen lifts the spoon to her mouth and eats.
Sandra comes back and scoops another spoon full.
Helen lifts it to her mouth and eats.

**How did Helen communicate with others?**

As already noted, Helen was very social. She initiated interactions with people using a number of different strategies. When she was standing she would walk up to people and stare at them:

obs#32 Helen is walking up and down the hallway, she looks agitated. She walks up to me and stares at me...she walks into the back room and up to Daman and Glenn...she walks up to Suzanne who touches her and then walks off to Alan's office. Helen follows and walks up to Alan who says to her, "Nice of you to come and visit."
Helen smiles back at him.

Helen also used eye contact or eye pointing, but because she had difficulty getting in and out of chairs, her opportunities to eye point to the things or people she wanted contact with were limited if she was sitting:
obs#20 Helen is sitting at the tea table, there are biscuits and a mug in front of her. She is gently rocking, looking down at the biscuits. Louise walks past. Helen looks up at her.
"Biscuit Helen?" She holds the biscuit up, Helen takes a bite.

Obs#37 Helen is kneeling on the floor in the back room staring intently at the toilet. She watches others get taken in there and tries to make eye contact with the staff who are assisting. She is now hand wringing, still looking at the toilet, she looks down and then back to the toilet. She watches Vivienne and Suzanne going in to the toilet. She is pulled up to her feet and taken to the dining room, all the while she is grinding her teeth and pulling a face.

On another occasion she was observed to use her eyes very definitely when her mobility difficulties seemed to preclude her using more obvious behaviours. Denise had asked Helen if she wanted to go to town to which she responded by looking up at Denise and smiling. Denise helped Helen up, she then stared at and began walking to the toilet door. Denise took her arm and said, "No Helen, this way." Helen resisted and within moments had wet herself.

In addition to proximity where possible, and eye contact, Helen used facial expression to good effect. She smiled a great deal at people as well as using facial expression generally:

obs#6 Deborah (another client) walks into the room. Helen looks up and gives her a huge smile.

obs#10 Deborah walks in to the room and speaks to Helen. Helen beams at her.

obs#52 Louise asks, "How are you going Helen, do you want to move?" Helen looks away to the side. She is sitting with five others at a table and has been colouring in with Louise. "How are you doing Helen, quite happy?" Helen keeps her head down and sits in close to Louise smiling at her.

She also smiled at the things she appeared to enjoy:

obs#13 As the tape begins, Helen smiles and claps her hands.

Smiles could indicate agreement:

obs#51 "Are you warm enough in here?" asks Louise Helen looks at her and smiles.

Other people however, did not receive this sort of treatment:
obs#6  Dean walks in, Helen stares at him.

Helen appeared to use what is described as stereotypic behaviour (Donnellan et al., 1984) to convey a range of information. She would rock, grind her teeth, wring her hands and clap, along with the use of facial expression. At other times she would hit herself on the chin or slap her face. Helen generally seemed to be very annoyed, upset, or anxious when she used these behaviours:

obs#2  Helen is sitting on her knees in her chair. She is grinding her teeth, rocking and wringing her hands.
She stops and starts again.
I laugh.
She looks up at me and stops, she then looks over at Jane and Glenn. She claps her hands sharply. Nobody pays any attention.
She goes back to rocking, she hits herself repeatedly on the chin. She looks very annoyed

obs#83 People are getting ready to go to the daycentre. They are getting coats on and collecting their bags.
Helen is standing in the lounge...she moves close to the doorway, she is hitting her chin...she rapidly moves away and sits down with some difficulty.
She watches Sandra helping Dean get ready. She looks down and then pulls her hands up hits her face and grinds her teeth.
As Dean gets his jacket on she increases the hitting.
Gareth is getting people organised for the van, he leaves the room.
Helen dramatically increases the hitting and rocking.

Helen would also use these behaviours if she was not engaged in any activity or if nobody was about. When she was upset the intensity and speed of rocking and hitting increased. If she was standing at these times, she would run about very quickly. At times staff would interpret these behaviours as indicating the need of some assistance:

obs#16 Helen is rocking and tapping the table in front of her, she rubs her face.
Denise says to her, "Do you want to get up Helen?" She turns Helen's chair around from the table.
Helen looks up at her and beams at her.
Denise helps her up.
Suzanne says to her, "Where are you off to?"
Helen looks at her and remains still.
Suzanne says, "Let's fix up your collar first."
Helen smiles and strolls off after her collar is fixed.

Stereotypic behaviours were also interpreted by staff to indicate that Helen was not happy about an event;
obs#43 Jane and Helen are in the park watching some workmen. One of the men starts up a chainsaw. Helen looks away from the men. Jane says, "Do you like that noise?" Helen grinds her teeth. "I don't either," says Jane, "Come on."

At other times she would turn away from an unwanted request or interaction;

obs#47 Helen is having morning tea. Michael is assisting her with a drink. He says, "Come on Helen, last bit." Helen moves her head away from the cup and grinds her teeth. "You don't want it then?" He wipes Helen's face.

Helen had little difficulty in following conversations:

obs#15 Clients and Suzanne are talking about the pot pourri sachets they are making. Helen watches, looking at each person as they speak.

She sometimes seemed to require visual prompts at times to ensure her understanding:

obs#22 Jane says to Helen, "Take the feeder to the bucket and then it is time for a swim. Helen walks off down the hall. Jane says, "You've run off with the feeder, here, I'll help, you know where it goes." She takes Helen to the bucket. Helen puts the feeder in the bucket.

Visual stimuli sometimes caused difficulties for Helen however. Any movement in her field of vision, or the introduction of bright colours or people would cause Helen to look around regardless of what she had been doing.

There were a number of observations in which some communication appeared to take place between Helen and her peers. At these times although no words were exchanged, it was clear that some message had been conveyed:

obs#19 Helen glances at her brother Kevin. He reaches out and grabs her leg. Helen grinds her teeth, she looks very agitated and glares back at him.

obs#29 Helen is sitting in the van looking out of the window. She looks over at Vivienne who looks back at her breathing heavily. Helen looks back out of the window then back to Vivienne. Helen becomes very agitated, she stares at Vivienne who looks quietly away.
How Successful were Helen's Communication Initiations?

Like Dean and Glenn, Helen used a number of strategies to initiate communication. She created 445 opportunities for communication to occur. She received 56 responses (see Table 7.5 for percentage response rates by staff) to these initiations. This response rate was comparable to the responses that Dean and Glenn received despite the fact that they initiated communication at a lower level.

Table 7.5: Communication opportunities and responses by Helen and Staff in the residential and vocational settings in phase one

<table>
<thead>
<tr>
<th></th>
<th>Res</th>
<th>Voc</th>
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</thead>
<tbody>
<tr>
<td>Ave. Comm. Opportunities by Helen per 10 minute observation</td>
<td>4.42</td>
<td>5.73</td>
</tr>
<tr>
<td>% Responses by staff</td>
<td>17%</td>
<td>7%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>2.4</td>
<td>2.17</td>
</tr>
<tr>
<td>Ave. Communication Opportunities by Staff per 10 minute observation</td>
<td>2.08</td>
<td>2.7</td>
</tr>
<tr>
<td>% Response by Helen</td>
<td>76%</td>
<td>91%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>1.47</td>
<td>2.73</td>
</tr>
<tr>
<td>% Encouragers used by staff</td>
<td>23%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Staff and a very few clients created 261 opportunities for communication with Helen, slightly fewer than half of the opportunities Helen created (Table 7.5). The environmental checklist section: "Changes in the Nature of Relationships between Staff and Clients" (Appendix 4) confirms that staff were frequently in the same areas as Helen. It also shows that staff were reasonably positive in the ways they spoke to her and in the things that they did with her. However, staff did not initiate a large number of interactions with her, nor did they expect her to respond to them. As a consequence, the interactions staff did initiate tended not to be open-ended or facilitative of further interaction. Not surprisingly, staff did not tend to recognise Helen's strengths or choices or the communicative potential of her behaviour.

In interactions when staff offered choices, Helen invariably indicated her response but did not always have that choice respected:

obs#5 "Would you like some of this?" A member of staff says, offering Helen a drink.
Helen turns her head away.
Staff holds the drink to her mouth...Helen drinks, screwing up her face.

On other occasions Helen would be offered a choice but would not have the opportunity to respond;

obs#24 Alan says, "Want to get up?", he pulls out her chair.

Of particular note from the running records was the point that when Helen was engaged in interactions initiated by other people and when those interactions went beyond one turn each, her own initiations decreased. It would seem that given Helen's behaviour towards others, her greatest need was for social interaction. When this need was satisfied, she did not need to persist in creating opportunities for interactions to occur. Interestingly, few of Helen's interactions with staff involved the use of encouraging phrases and behaviours. Nonetheless Helen responded, albeit at a lower rate in the residential setting where staff created slightly fewer, shorter and less encouraging interactions than in the vocational setting.

Figure 7.14: Percentage of total observation time spent by Helen on activities in residential and vocational settings

![Residential setting chart]

![Vocational setting chart]
The results from the environmental checklist showed that Helen spent one fifth of the observed time at the vocational centre engaged in activity sessions (Figure 7.14). However, she was often a passive observer even though she appeared to be interested in being involved in numbers of the activities available:

obs#45 Helen is sitting at the end of the art table, there is a lot of activity at the other end. She is rocking quietly and then looks sharply at those at the other end and claps her hands. She gets no response. She bangs her hand quickly on the table. She gets no response.

obs#18 Helen is sitting at the table with Deborah, Gemma, Marline, Suzanne and Jane. The others are drawing Christmas trees. Helen is rubbing her hands together and rocking sharply. People all around her are talking. She is looking at all of them... The three other clients all get coats to cover their clothes. Helen starts slapping her face and rocking sharply. She rubs her hands together then slaps her face again. Suzanne says, "Helen are you going to help?" Helen smiles.

At other times she would be present where activities were taking place but in which she did not seem interested:

obs#3 Helen is sitting looking at Bronwyn, she has her head down. Jane is bouncing a ball in front of her. Helen makes no response. Jane shows Helen the ball and takes her hand. Helen looks away. "Did you see Mark kick the ball?" She manipulates Helen to do the same. Helen makes no response.

Like Dean and Glenn and despite those activities in which she participated, large parts of Helen's day were without activity (Figure 7.14). At these times few people engaged in any interaction with her. At the vocational centre she spent most of her day in the "back room" along with her brother Kevin and Glenn. This room was a major traffic route to the laundry and toilets. Many people passed through but few stopped to talk with any of the people there.
Helen received considerably fewer instructions than the two men discussed previously (Figure 7.15). The running records suggested that whereas Glenn was presumed to understand many of the requests made of him and Dean could usually be coerced into responding, Helen seemed to need visual prompts and physical assistance to do many things. The expectations that staff had of Helen were therefore, much lower than for the men. The result of this was that Helen was asked to do less and that a greater proportion of staff-initiated interactions were involved with information transfer or social interaction.

These results are confirmed by those from the "Activities" section of the environmental checklist (Appendix 4). Of all of the disabled participants in this study, Helen had the least choice about whether she wanted to be involved in activities or not or what she did when there. She was given little information about any activity in which she may have been involved and had few chances to receive help if she needed it. Although a number of the activities for which she was present
included her peers, there were almost no opportunities created for turn taking involving Helen within them.

**Summary.**

Like Dean and Glenn, Helen was a very social person. Unlike the men, she experienced some significant mobility and movement difficulties and was therefore restricted in terms of access to others. She was a person who liked to engage with others, particularly in one-to-one situations.

Helen used a range of strategies to try to engage people. She would attempt eye contact, she used facial expression and where she could she used proximity to others. Helen also used behaviour generally described as stereotypic to convey information. Rocking was sometimes interpreted by staff to mean that she was finished an activity. At other times this same behaviour could be interpreted to show pleasure, annoyance or frustration. She would also clap her hands, bang on tables and hit herself to show displeasure or concern.

While Helen followed conversations intently her understanding often seemed to be assisted with the use of visual prompts. Physical prompts and hand over hand manipulation were also used with Helen. It was difficult to know however, whether Helen needed this support to aid understanding or to overcome the movement difficulties she experienced.

Helen had few of her communication initiations recognised or responded to. There seemed to be fewer expectations of her to participate in activities at the vocational centre where she was often a passive participant, whether she wanted to be involved or not. In the residential setting, there were no recorded observations of Helen being involved in any activities beyond eating. As a consequence of this situation, when staff did engage with Helen it was to interact socially or to pass information as much as to give her instructions.
Helen: Results Following Staff Training and the Introduction of an Augmentative Strategy

Subsequent to staff training, a further 71 observations were taken of Helen and those with whom she interacted. Forty three observations were completed in the vocational setting and the remaining 25 were completed in the residential setting. Thirty six observations had been completed in both settings (23 in the vocational setting and 13 in the residential setting) prior to the introduction of Helen's augmentative communication strategy (phase three). The remaining 35 observations were completed in the final phase.

Initiating communication opportunities.

Over the course of the study Helen's communication remained difficult for staff to understand. She had mobility difficulties that often precluded her from using strategies that others could easily interpret and she was very easily distracted. As shown in Table 7.6, staff increased the levels to which they responded to her. In addition, the interactions that resulted from communication opportunities created by Helen tended to decrease in length over the study although they were generally longer than the interactions resulting from communication opportunities created by staff.

All of the staff who worked with Helen increased the number of communication opportunities they created with her. For the residential staff this occurred once they could use an augmentative communication strategy with her (phase three). The vocational staff increased the number of communication opportunities they created with her subsequent to staff training (phase two). They maintained this increase over the remainder of the study.
Table 7.6: Communication opportunities and responses by Helen and Staff across the three phases of the study

<table>
<thead>
<tr>
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<th>Phase 1 5 mths</th>
<th>Phase 2 5-8 mths</th>
<th>Phase 3 8-10 mths</th>
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<tbody>
<tr>
<td><strong>Ave. Comm. Opportunities by Helen per 10 minute observation</strong></td>
<td>4.42</td>
<td>3.9</td>
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<tr>
<td><strong>% Responses by staff</strong></td>
<td>17%</td>
<td>25.5%</td>
<td>25%</td>
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<tr>
<td><strong>Ave. Interaction length in turns</strong></td>
<td>2.4</td>
<td>0.91</td>
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<td><strong>Ave. Comm. Opportunities by Staff per 10 minute observation</strong></td>
<td>2.08</td>
<td>2</td>
<td>3.6</td>
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<tr>
<td><strong>% Response by Helen</strong></td>
<td>91%</td>
<td>91%</td>
<td>70%</td>
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<td><strong>Ave. Interaction length in turns</strong></td>
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<td>1.45</td>
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<td><strong>% Encouragers used by staff</strong></td>
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<td>26.3%</td>
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<table>
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<th>Phase 1 5 mths</th>
<th>Phase 2 5-8 mths</th>
<th>Phase 3 8-10 mths</th>
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<tbody>
<tr>
<td><strong>Ave. Comm. Opportunities by Helen per 10 minute observation</strong></td>
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<td>4.2</td>
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<td><strong>% Responses by staff</strong></td>
<td>7%</td>
<td>14%</td>
<td>16%</td>
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<td><strong>Ave. Interaction length in turns</strong></td>
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<tr>
<td><strong>Ave. Communication Opportunities by Staff per 10 minute observation</strong></td>
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<tr>
<td><strong>% Encouragers used by staff</strong></td>
<td>35%</td>
<td>44%</td>
<td>38%</td>
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As was the case with Dean and Glenn, Helen decreased the degree to which she created opportunities for communication in both settings as staff increasingly recognised those opportunities and as they increased the opportunities they created. Although the percentage responses that Helen made to the increasing initiations of the residential staff dropped during the final phase of the study (Table 7.6.1), the average rate at which she responded to the initiations of others in a 10 minute observation did not.

Staff in the vocational centre continued to use language that encouraged Helen to respond for fewer than half of the interactions they had with her. The residential staff became a great deal more encouraging in their language in phase three.

Staff in both settings changed the intent behind the communications they had with Helen (Figure 7.16). Staff substantially reduced the number and frequency of occasions on which they told Helen what to do, even though she was already the recipient of few instructions.
Unfortunately they also reduced the degree to which they interacted on a purely social level. This had also occurred with respect to Glenn and, in the vocational setting, to Dean. As with Dean and Glenn, staff began to provide Helen with a great deal more information than anything else.

If staff changed the communicative intent of the interactions they had with Helen it was reasonable to expect change in the nature of the relationships Helen had with staff. Figure 7.17 illustrates that positive changes did occur but that they were not sustained in the vocational centre. The section of the environmental checklist: "Change in the Nature of Relationships between Staff and Clients" that this figure refers to (Appendix 4), identified that over the course of the study all of the staff who interacted with Helen were positive with her in terms of their language and actions and they initiated interactions with her at an increasing rate. However, it took until phase three for the residential staff to establish a more appropriate mode for communication to occur with Helen. The vocational staff did not adopt the use of this strategy to any great extent and consequently were unable to provide communication opportunities for Helen in a mode suitable for her.

Figure 7.16: Instructions given, comments made (information transfer), social interaction and social etiquette statements made to Helen by Staff over the three phases of the study
The environmental checklist also identified that the opportunities that all staff created with Helen for communication, if not always in the appropriate mode, were open ended and positive. The vocational staff however, ceased to expect responses from her and as a consequence ceased to act as facilitators of communication with others. Although the residential staff used Helen's augmentative strategy on a frequent basis, they too had difficulty in seeing how they could facilitate interactions between others and Helen. This difficulty did not stop them from recognising Helen's communicative strengths and choices.

Figure 7.17: Relationships between Staff and Helen over the three phases of the study
Access to activities.

The change in the availability of activities recorded with the use of the environmental checklist was significant for Helen. Unlike either Glenn or Dean, a wider range of activities remained available to Helen during phase two and three (Figure 7.18). Given that she spent more of her days engaged in some form of activity than she did doing otherwise, it was easy to see how she became the recipient of so much information transfer at the expense of purely social interaction (Figure 7.16) that was perhaps more likely to occur outside of specific activity times.

Figure 7.18: Nature and availability of activities For Helen in the residential and vocational setting over the three phases of the study

The results from the environmental checklist section "Activities" (Appendix 4) confirm the increase in the availability of activities for Helen in both settings. It was not however, until Helen had access to an augmentative communication strategy that the communication potential of the engagement in activities was recognised. Nevertheless, Helen had fewer opportunities to choose whether or not to participate in the activities in which she engaged whereas her peers were increasingly expected to decide for themselves whether they wished to be involved or not.
Staff in the vocational setting began to include Helen in many more of the craft activities that were available in that setting in phase two. Given that craft was an area of interest to Helen, she responded very positively to these opportunities. Staff were also able to offer her more assistance when that was needed. Only in the last phase of the study did staff in both settings make available to Helen a greater range of activities and information about those activities. In addition, at this time, opportunities for interaction and turn taking within activities between staff and clients began to occur.

**Helen's communication in phase two and phase three.**

While staff in the residential setting made considerable progress in their recognition of the communicative potential of her behaviour, the vocational staff made only very small gains which were not sustained (Figure 7.19). This was despite Helen using a number of strategies in specific situations that seemed to convey a message very adequately:

obs#105 Helen is sitting in the practically empty dining room, Glenn and Louise are setting the tables. Helen looks over as Louise talks to Glenn. Louise leaves, Helen looks up at her. Louise leaves again, Helen looks down at the floor. Helen leans over and pushes the cutlery away from her, she then picks up one corner of the table and tips it up. All the while she is looking towards the kitchen. Louise comes out saying, "Who was that? Helen? Does it annoy you?" Helen begins hitting the side of her face. Louise says, "Glenn, we won't set out the cutlery yet, I think it annoys Helen." They walk away Helen rocks sharply, grinding her teeth and flapping her hands, she looks annoyed. She slaps the side of her face. Louise walks back in, Helen's rocking slows and she rubs her hands together.

The augmentative strategy designed for Helen was much like that introduced to Dean. Helen had significant movement difficulty (including fine and gross motor problems) and required a great deal of assistance to complete any physical activity; consequently, eye pointing at a range of objects and Makaton (Walker, 1991) symbols were the preferred strategies for Helen. While Dean became more obvious in his intentions over the course of the study, Helen's interactive strategies and responses remained, at times, quite subtle. In addition, Helen's
distractability sometimes made it difficult for her choices to be recognised.

Figure 7.19: **Staff recognition of the communicative potential of Helen's behaviour over the three phases of the study**

![Bar Chart: Staff recognition of the communicative potential of Helen's behaviour over the three phases of the study.

Residential setting:
- Phase One: 0%
- Phase Two: 15%
- Phase Three: 35%

Vocational setting:
- Phase One: 5%
- Phase Two: 10%
- Phase Three: 20%

Like the results from the Environmental Checklist, running records indicated that some staff in the vocational setting seemed to realise that activities were opportunities for communication to take place yet they did not seem to be prepared for, or able to interpret her responses:

obs#124  Helen is in a craft activity, Suzanne is offering her a choice of fabrics.
Suzanne says to Helen, "Would you like to choose which one?"
Helen looks at the two fabrics.
Suzanne says, "This one?"
Helen looks away.
Suzanne says, "This one?" She points to the second choice, a piece of tartan.
Helen looks at the tartan.
"Ok," says Suzanne. She moves the tartan piece away and says to Gillian, another client, "Gillian, would you like the tartan piece?"
Helen looks away from the activity and remains this way throughout the rest of the observation.
Staff in the residential setting quickly adopted Helen's augmentative strategy. In some cases there was a lack of certainty that making "appropriate" choices was something that Helen could do:

obs#161 Helen is making her lunch with Mary. Mary says, "What would you like on your lunch?" She offers meat and cheese. Helen looks at the meat. Mary says, "This or this?" She offers cheese. Helen looks over at the meat. Mary says, "I think that's meat. Would you like pickle with it?" She offers the pickle and the Marmite jars to Helen. Helen looks at the pickle. Mary then offers the Marmite. Helen looks away.

The first few months of the use of this strategy were difficult for all involved. During the course of the rest of the study, Helen's responses to the initiations of others using the cards in the residential setting seemed to drop (as noted in Table 7.6.1). After a time Helen seemed to use the "Yes", "No" cards with verbal questions and comments in preference to the other symbols cards she had available. The "Yes", "No" cards remain Helen's preferred method for communication.

Staff in the vocational setting persisted with the use of cards with Helen, and found after a time that in that environment also, Helen preferred to use "Yes", "No" rather than a variety of other cards. They also found that the fewer the distractions in that setting, the easier it was for Helen to concentrate on what she was being asked.

**Summary.**

It would seem that staff felt the need of some specific strategy with which to communicate with Helen. Although she initiated interactions at a high level, she received few responses to them. After training, the staff in both settings increased their responses to her but the recognition that Helen's behaviour had a communication function remained problematic especially for the vocational staff. In part this could have been caused by a lack of awareness that Helen would actually have opinions and preferences.
Helen was involved in a greater number of activities than were either Dean or Glenn but until such time as an augmentative strategy was in place for her, there were few opportunities available to communicate with others within these activities. Clearly, while activities provide opportunities in which communication can occur, they are, of themselves, insufficient to promote communication between people with and without severe disabilities.

The difficulties that Helen experienced when asked to make choices made it harder for staff to accept that Helen could have preferences or make choices. However, the recognition by others of the communicative potential of the behaviour of a communicator is an essential first step in the communication process. Following this, the provision of an augmentative communication strategy can further support significant changes in communication for people like Helen.

As was the case for Dean and Glenn, the role of the staff working with Helen was critical in the communication gains she made. They needed to recognise that she was communicating and they needed to facilitate communication occurring with her. Where that occurred significant gains were made; where staff had greater difficulties in this respect, progress was modest.

**Vivienne: Communication Profile**

In the baseline phase of the study 106 observations of 10 minutes duration of Vivienne and those with whom she interacted were completed. Sixty-nine observations took place in her vocational centre and 37 were in her residential setting. Observations were timed so that one 10-minute observation was made for each 30 minutes of Vivienne's day from 7:30am to 7:00pm over the seven days of the week. Observations for this phase of the study were completed in 12 weeks over a five-month period. Observations began in the residential setting one-month after they had begun in the vocational daycentre and continued for one month subsequent to the completion of the observations in the daycentre.
Vivienne had a cleft palate. She has not had any remedial surgery for these difficulties. As a result she found eating difficult. Her breathing was also very noisy. She frequently closed her lower lip over the top, taking in the base part of her nose. Vivienne's teeth have all been removed.

She had good motor skills in some activities like eating (despite the difficulties she experienced with her mouth) but had real difficulty in initiating many actions without a physical prompt:

obs#18 At the pool, Jane is talking to Vivienne about kicking her legs. She touches Vivienne's legs at the same time.
Vivienne kicks...
"Show Suzanne how you can kick."
Vivienne scowls.
Jane touches her leg
Vivienne kicks

Vivienne was a person who found social contact with people very difficult at times. She often seemed fearful. When she sat anywhere, her back was always to the wall (except when she ate in her residential setting). If she sat in an armchair she would frequently put her feet up on the seat, wrap a blanket or a towel very securely around her legs and push cushions down between the arms of the chair and her legs. Despite the intervention of staff, who tried to discourage her from doing this by removing the cushions and blankets and by telling her off, she persevered in sitting this way:

obs#52 Vivienne is sitting on a chair, her legs are up on the seat and she has wrapped a blanket around them.
Jane says, "Put your legs down."
Vivienne does
Jane leaves the room and Vivienne puts her legs back up.
Denise says, "I think it's a bit cold Vivienne (for a walk)."
Jane returns, "Yeah I wondered about that, put your feet down!"

obs#55 Suzanne says to Vivienne, "Put your legs down like a lady, very quickly!"
Vivienne looks away.
Suzanne walks towards Vivienne.
Vivienne puts her legs down
Suzanne says, "Good."
In unfamiliar situations Vivienne was very fearful and nervous. She would not allow anybody to follow her and she kept other people well away from her:

obs#29  Vivienne is out for a walk with Suzanne and Bronwyn, she walks along behind them. Her hands are up around her neck, she is screwing the neckband of her shirt around in her hands. She moans, half crying. Someone walks past, she shies away. She walks around a puddle. Suzanne says, "Good lady." Vivienne gets closer to Suzanne who turns and speaks to her. Vivienne shies back.

obs#40 At the library, Vivienne sits on a chair, she is panting, "uh huh." She is very tense.

Vivienne had the reputation of being somewhat bad tempered:

obs#8  Alan says, "Gidday Vivienne, how are things?" She screws up her face and glares at him.

There were definitely some people whose proximity she did not like. The anecdotal notes accompanying observation #8 detailed an incident subsequent to Daman entering a room in which Vivienne was sitting:

Vivienne got really upset when Daman came into the lounge. She screamed, hit the chair and hit herself on the head. Jane got her to do other things but she was still upset 20 minutes later when Jane took her out for a walk.

There were also things that Vivienne did not like happening. An invasion of her personal space was one such example:

obs#14  In a music session. Denise is playing the xylophone (a child's toy). She says, "What's up Vivienne, do you want to do this when the music starts?" She passes Vivienne the sticks. Vivienne takes them and puts them on the floor. Denise bends down to speak to Vivienne putting her hands on Vivienne's knees. She turns away, pushing Denise's hands away as she does.

Despite the reputation Vivienne had, she was very attentive to her surroundings. Very little that occurred in her vicinity escaped her attention:

obs#5  Vivienne observes Alan walk past. She looks over at Helen and Tammy (one of the observers). Alan walks past again and Vivienne watches him pass. Jane is talking in the hallway, Vivienne turns to look.
She also showed that she was very capable of carrying out choices herself, although staff often provided supervision:

obs#4 Vivienne gets up from her table and walks to the drinks bench. She takes a cup.
Alan says, "Oh I didn't notice you there."
Vivienne puts sugar in her cup.
"That's the way," says Alan, "You can choose, milo, tea or coffee."
Vivienne moves her hand and makes a noise.
Jane says, "Milo?"
Vivienne picks up the milo and pours some in to her cup...she pours in the water.
"Are you watching, that's great," says Jane.

Vivienne seemed to have to contend with many instructions during her days:

obs#47 Alan says, "Look at what you are doing!"
Vivienne looks away.
Alan says, "That's enough now. Now pour some milk in."
Vivienne takes the jug and pours in the milk.
"OK that's enough, put the jug down and I'll bring the cup over."
Vivienne stands there, holding the jug...

obs#7 Suzanne walks up to Vivienne, "Wipe your face please."
Vivienne wipes her face.
Suzanne indicates that she wants the table wiped as well, "Over there, up there."
Vivienne wipes.
Suzanne then says, "Right, put your plate over there."
Vivienne takes the plate to the trolley...
"Now put the feeder in the bucket, you know where it goes, go on."
Vivienne puts the feeder in the bucket.
"That's right, you know."

At other times, Vivienne seemed to need permission before acting on any needs or desires she might have had:

obs#54 Vivienne opens the toilet door and stands there looking back down the hall, she says, "uh huh."
Jane arrives, "What's the problem, what do you want?"
"You'll need to show me."
Vivienne says, "Na na na."
"Do you want something from your bag?"
They both look in the bag and then go in to the toilet.

Although she spent a good deal of time where she could see others and be involved if she wanted to, Vivienne was a woman who liked her own space. There were a number of observations detailing how Vivienne would remove herself for some time out:
Vivienne is sitting in the back room, there are five other clients in there.
Suzanne walks in. Vivienne looks over at her.
She stands and pushes her chair down the hall past the bathrooms.
Suzanne says, "Where are you going? Do you want to sit outside?"
Vivienne calls out quite loudly, "Ahh."

How did Vivienne communicate with others?

Vivienne used a range of strategies with which to initiate communication. She attempted to make eye contact with people and she vocalised a great deal. Due to the difficulties she had with her mouth it may have been that numbers of her vocalisations were involuntary, however she was at times very purposeful in the sounds she made and when she made them. In addition to using vocalisation as a means of initiating interactions, she vocalised to maintain them:

obs#2 Sitting down to lunch.
Alan says, "Ah now Vivienne," as he puts her lunch box down in front of her.
Vivienne whimpers, "Ah huh."
Alan puts a plate in front of her.
"Ah huh," she bangs the table with her hand.
"There you go, some sandwiches for you."
"Ah huh."
Alan asks, "Did they fall apart?"
"Ah huh."

obs#4 Vivienne is sitting at the table with Dean, she is whimpering to herself and eating a banana. She pushes her sandwiches away...
Jane asks, "Where have your sandwiches gone?" She puts the lunch box back in front of Vivienne saying, "Try that."
Vivienne screws up her face and cries out.
"Put it in there then," says, Jane pointing to the lunch box.
Vivienne puts the food in the box and closes it.

Vivienne also used objects to get her message across:

obs#2 Alan says, "What will we do?"
Vivienne pushes her lunch box across at him.

At other times, Vivienne used proximity to indicate that she wanted something:

obs#19 Christmas projects are being sorted out. Vivienne is sitting in the corner watching what is going on. She stands up and moves to the table.
Jane says, "Do you want a seat Vivienne?"
Vivienne gets a seat and joins the group.
The combination of strategies Vivienne used to initiate communication was such that others could sometimes assign intent to her behaviours:

obs#32 Vivienne is eating morning tea (a piece of loaf). She picks up the remaining crumbs and eats them. She then looks from the staff to her empty plate. She twists her plate around and looks up. She yells out. A staff member says, "What's wrong? Do you want me to take that?" Louise says, "Want a cup of tea?" Vivienne yells more. Louise passes her some loaf. She eats.

obs#48 The van has arrived at the pool. Vivienne nudges and pushes against Jane. "OK Vivienne," says Jane, "Are you keen to get out?" She moves. Vivienne gets out.

As in the example from obs#32, she would sometimes become quite insistent if her needs were not recognised and responded to:

obs#9 Vivienne is holding out her plate and calling out. She is looking at Jane. She gets no response. She bangs very heavily on the table and looks back at Jane. No response. Vivienne goes back to holding out her plate and calling out. No response. She calls out again. Jane says, "There's a cup here when you're ready." Vivienne bangs the table. "Listen, if you have finished your biscuits you can get a drink...you know what to do...you're having a bad day aren't you?...Take off your feeder if you want a drink." Vivienne bangs the table and calls out.

obs#91 Vivienne puts her shoe on and pulls the laces. She takes it off again and walks up to "X". Vivienne can be heard saying, "Na na na," in a loud voice. She screams. "X" says, "Put them on and I'll do them up." Vivienne screams and bangs her shoes on the ground. "That is naughty," says "X". Vivienne returns to the lounge, shoes on and done up.

At times Vivienne would become very agitated and upset. She would hit herself, other people, bang furniture, kick and scream. At times the reasons behind these behaviours were clear, at other times, no explanation could be found:
obs#10  Vivienne is sitting on the floor having her shoe laces tied. Gwen says, "Come on and get a cushion."
Vivienne screams, she bangs the floor, flings her towel away. She is rocking back and forward and kicking the floor. "Vivienne, what's the matter?"
Vivienne rocks. "Do you want something?"
Vivienne screams.

When Vivienne was happy with a suggestion that had been put to her she would acknowledge the initiation. At other times, looking away or a non response seemed to convey information:

obs#27  ...Jane asks, "Would you like to read a book?"
Vivienne lifts up her left hand. "You would?"
They read together.

obs#18  In music Vivienne is offered an instrument. She looks away
Staff take it back.

obs#73  Paula says, "Are you going to come and get your feeder on for a drink?"

**How successful were Vivienne's communication initiations?**

Although she used a range of strategies of which many were very obvious, like her peers, Vivienne had little success in eliciting responses from others. Out of 373 communication opportunities she created, she had 69 responses, all from staff (Table 7.7). Conversely, staff created a total of 187 communication opportunities with Vivienne. She responded to 155 of those opportunities.

Like her peers, the interactions she had in the residential setting, whether they were initiated by herself or others, were longer than in the vocational setting and were longer in both settings when initiated by her.
Table 7.7: Communication opportunities and responses by Vivienne and Staff in the residential and vocational settings in phase one

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<tr>
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<th>Res</th>
<th>Voc</th>
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<tbody>
<tr>
<td>Ave. Comm. Opportunities by Vivienne per 10 minute observation</td>
<td>3.94</td>
<td>4.7</td>
</tr>
<tr>
<td>% Responses by staff</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>3.6</td>
<td>2.39</td>
</tr>
<tr>
<td>Ave. Communication Opportunities by Staff per 10 minute observation</td>
<td>1.48</td>
<td>1.91</td>
</tr>
<tr>
<td>% Response by Vivienne</td>
<td>87%</td>
<td>81%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>2.83</td>
<td>1.88</td>
</tr>
<tr>
<td>% Encouragers used by staff</td>
<td>26%</td>
<td>33%</td>
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</table>

Of all of the participants, Vivienne had the highest response rate from staff in the vocational setting while the responses she got from staff in the residential setting were, at 14%, the lowest of her peers (22% for Dean, 18% for Glenn and 17% for Helen). In general, Vivienne’s interaction strategies were considerably more obvious than her peers. Whereas her peers would generally not persist if the opportunities they had created did not achieve a response, Vivienne would continue until she got a response or the assistance she required.

The only observations taken in which Vivienne engaged in non eating activities in the residential setting were one session in which she tidied her drawers, another in which she folded washing and a third session in which she assisted in preparing a meal. Outside of these times and when food was available, Vivienne did not engage with other people. She usually sat by herself, often away from where others were. Vivienne was engaged in a greater range of activities than any of her peers in the vocational setting (Figure 7.20), but like the others, she was rarely any more than a passive participant. Of the 15 activities Vivienne was observed to engage in, four were video watching, one was sitting with Suzanne while she read parts of the newspaper out, another was having a book read out to her and one was a library visit at which Vivienne spent all of her time in a chair. In all but three of the remaining observations Vivienne was an observer of the activities taking place. It must be noted however, that Vivienne often chose this role herself by refusing offers of assistance or equipment that would allow her to be more actively involved. Outside of the activities in
which Vivienne did engage, or around food, Vivienne had almost no contact with others despite any opportunities she may have created.

Figure 7.20: Percentage of total observation time spent by Vivienne on activities in residential and vocational settings

The results from the environmental checklist section: "Activities" (Appendix 4) were very similar for Vivienne and for her peers, despite the increased time that Vivienne spent participating in activities in the vocational setting. Given that Vivienne was seen as very determined, it is not surprising that she had more choice available to her about whether to participate in activities or not. There were also more opportunities for her to request and receive assistance within the context of activities and staff tended to try to keep her involved by providing her with information and by using activities as contexts for conversation. They also tended to try to get Vivienne to interact with others to a greater extent than they tried with her peers. However, as was the case for all of her peers already discussed, there was not a large range of activity available.
Figure 7.21: **Instructions given, comments made (information transfer), social interaction and social etiquette statements made to Vivienne by Staff**

The initiations made by staff to Vivienne were still predominantly instruction giving and were, at times, relatively insistent (Figure 7.21):

> obs#15 Vivienne is having a drink, she is moving her lower lip up over her top lip, taking in the base of her nose (it may be the way she has to swallow). Suzanne says, "Drink up please, drink up." Vivienne looks at her and repeats the previous lip movement. "Finish your drink, put your cup away." Vivienne drinks. "That's it, in the kitchen." Vivienne stands and goes to the kitchen, Suzanne follows. She says, "Wipe your mouth, take your feeder off." Vivienne drops her feeder and gets her mouth wiped. "Come on to the toilet." ...Vivienne returns from the toilet. Suzanne says to her, "Well done, did you flush the toilet?" Vivienne does not respond.

In general there were considerably more opportunities available for Vivienne than for her peers to engage with others in interactions in which communication other than instruction giving occurred. These included interactions in which Vivienne was offered choices, where she was humoured and where running commentaries to activities were
provided. It may have been that staff had the perception that it was better to keep her engaged and in a good frame of mind rather than risk difficulties. However, the demands on Vivienne to complete activities such as cleaning up, in prescribed ways and to a certain standard were also higher than they were for her peers. Although staff did not initiate the number of interactions with Vivienne that they did with Helen (187 against 261), Vivienne's interactions were at least one turn longer than Helen's in the residential setting and substantially similar in the vocational setting. Potentially therefore, Vivienne could have been seen as more able than her peers and as such, the recipient of greater attention.

The environmental checklist section: "Changes in the Nature of Relationships between Staff and Clients" (Appendix 4) provides further information on these points. Staff and Vivienne were in the same areas more than was the case for her peers. In particular the vocational staff seemed to be more careful in their interaction with her than was the case with either Dean, Glenn or Helen. They initiated more interactions with her and they were more careful to ensure that their interactions were in the appropriate mode for her. Staff expectations of Vivienne's responses were also the highest of the four participants (see numerical results of this subsection of "Percentage change in the Nature of Relationships between Staff and Participants over the Three Phases of the Study" in Appendix 4). By contrast, at the outset of the study, staff did not use a particularly open ended style of communication, nor did they respond to Vivienne's strengths and choices very greatly or recognise that a great deal of her communication took place through her use of behaviour.

**Summary.**

Vivienne used a wide range of strategies to satisfy her needs for interaction. She would make eye contact with others, vocalise, use objects and use proximity and body movements to indicate to others that she had a specific need or that she was responding to the initiation of another.
Unlike her peers, Vivienne was at times quite demanding, in that she would persevere with a communication initiation until her needs were met. She had the reputation that accompanied this perseverance and was seen as being somewhat bad tempered or challenging. As a result of this, staff tended to try to use a range of strategies to keep her involved in activities and to avoid difficulties.

As with her peers, few of the communication opportunities that Vivienne created were responded to by staff. This occurred particularly outside of the sessions in which Vivienne was a participant in activities or where food was available. Especially in the residential setting, Vivienne would distance herself from her peers and staff and sit quietly by herself. Obviously, at these times, opportunities for communication were severely limited.

Although she demonstrated skill and ability, Vivienne occasionally required some help or prompting to use skills. At other times, staff would be ready to provide on-going instruction whether it was actually required or not.

Vivienne spent up to a third of her day in the vocational centre, if not actively engaged, then as an observer in a range of activities. During these times opportunities existed for a range of interactions initiated by staff for purposes other than instruction giving. Despite this variation in the content of communication, the opportunities for Vivienne to interact with others were few.

**Vivienne: Results Following Staff Training and the Introduction of an Augmentative Strategy**

Subsequent to staff training, a further 73 observations were taken of Vivienne and those with whom she interacted. Forty-six observations were completed in the vocational setting and the remaining 27 were completed in the residential setting. Forty-five observations were completed in both settings (30 in the vocational setting and 15 in the residential setting) during phase two and the remaining 28 observations were completed in phase three.
Initiating communication opportunities.

In phase two, the residential staff increased their responses to the communication opportunities that Vivienne created only modestly (Table 7.8.1). However, that response rate increased considerably in phase three. At the same time, the residential staff significantly increased the amount of communication that they initiated with Vivienne. As was the case with her peers, Vivienne's communication initiation and response rate dropped concurrently with these other changes.

Staff in the vocational centre also increased the degree to which they responded to Vivienne's communication initiations (Table 7.8.2) but unlike their residential colleagues there was little change to their responses once Vivienne began using an augmentative strategy. After staff training the vocational staff also increased the amount of interaction they initiated with Vivienne but they did not sustain this into the final phase when Vivienne had access to her augmentative strategy.

The length of all of the interactions resulting from communication initiations by either staff or Vivienne decreased slightly as the actual number of interactions increased. This pattern was consistent for all of the disabled participants.
Table 7.8: Communication opportunities and responses by Vivienne and Staff across the three phases of the study

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<th>Phase 1</th>
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<td>5 mths</td>
<td>5-8 mths</td>
<td>8-10 mths</td>
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<tr>
<td>Ave. Comm. Opportunities by Vivienne per 10 minute observation</td>
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<td>% Responses by staff</td>
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<td>Ave. Interaction length in turns</td>
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<td><strong>7.8.2 Vocational Setting</strong></td>
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</tr>
<tr>
<td>Ave. Communication Opportunities by Staff per 10 minute observation</td>
<td>1.91</td>
<td>2.39</td>
<td>1.35</td>
</tr>
<tr>
<td>% Response by Vivienne</td>
<td>81%</td>
<td>94%</td>
<td>89.4%</td>
</tr>
<tr>
<td>Ave. Interaction length in turns</td>
<td>1.88</td>
<td>1.65</td>
<td>1.29</td>
</tr>
<tr>
<td>% Encouragers used by staff</td>
<td>33%</td>
<td>30%</td>
<td>53%</td>
</tr>
</tbody>
</table>

There was little change in the degree to which residential staff used statements that encouraged Vivienne to interact with them. In the final phase, however the vocational staff became considerably more encouraging in their use of language. As was the case for all of her peers, the use of encouraging language by staff appeared to make little difference to whether Vivienne communicated further or not. As can be seen over the period of the study, Dean, Glenn, Helen and Vivienne all attempted to establish communication with staff and others at rates much higher than others communicated with them. It was also shown that there were numbers of occasions in which the language used may have been encouraging but the actions of the speaker actually discouraged communication from occurring.

In general, staff used proportionally fewer encouraging interactions with clients in the residential setting. However, the disabled participants enjoyed interactions that were generally longer in the residential setting than in the vocational centre. Further, residential staff responded to the participants at a higher rate. This would indicate
that even if the language that they used was not so encouraging, their willingness to identify behaviour as being communicative, and to respond to that behaviour, clearly affected their clients.

Staff in both settings did change the nature of the communication that they had with Vivienne (Figure 7.22). Staff in the vocational setting became considerably less directive and gave Vivienne a great deal more information about those things that were happening around her. Already quite low, the degree to which staff engaged in social interaction with Vivienne changed little. It is interesting to note that Vivienne, who had something of a reputation as being bad tempered, was the recipient of more etiquette type statements than she was of general social interaction.

Figure 7.22: Instructions given, comments made (information transfer), social interaction and social etiquette statements made to Vivienne by Staff over the three phases of the study

![Bar chart for Residential Setting](image)

![Bar chart for Vocational Setting](image)
In the residential setting Vivienne was subject to increased instruction giving. This was a reversal of the situation that the rest of her peers found themselves in. As was the case in the vocational setting, there was little change to the degree of social interaction that Vivienne had with residential staff.

As was the case with her peers, after staff training staff began to spend more time in the areas in which Vivienne frequented. As was the case with her peers, the residential staff became more positive in their relationship with Vivienne in the latter stages of the study (Environmental checklist section: "Changes in the Nature of Relationships between Staff and Clients", Appendix 4). The vocational staff, already very careful in their relationships with Vivienne, increased the frequency of their positive interactions with her over the second and third phases of the study (Figure 7.23).

Figure 7.23: Relationships between Staff and Vivienne over the three phases of the study
As seen from Table 7.8 (p.240), all of the staff working with Vivienne increased the degree to which they initiated interactions with her but as noted in the environmental checklist section: "Changes in the Nature of Relationships between Staff and Clients" (Appendix 4) they continued to experience difficulties in ensuring that their interactions were in the appropriate mode for her. While the staff in the residential setting significantly increased their responses to her initiations, along with their vocational colleagues, they experienced difficulty in ensuring that their own interactions were in modes appropriate to Vivienne. All staff, particularly the residential staff, became more open-ended in their style of interactions, they expected responses and they increasingly recognised the communicative potential of Vivienne's behaviour (Figure 7.25). Once Vivienne began using her augmentative strategy, these changes were increasingly apparent.

These results are of particular interest when combined with working notes from the period in which Vivienne began to use her augmentative strategy. Staff in both settings commented on a number of occasions about the effect of this strategy on Vivienne and on those around her. Two particularly telling comments from staff in each setting illustrate how it was that one group of staff changed their behaviour more than another:

15/10 (Residential staff person on Vivienne's communication strategy)
"This is really going to change the things that we do here."
"Why?"
"Because Vivienne keeps telling us that she's bored."

20/10 (Vocational staff person on Vivienne's communication strategy)
"This strategy is all very well but I can see that she's only going to use it to get her own way."
"Isn't that what communication is all about?"
"Well I suppose so but it's more than that with her."

**Access to activities.**

In the residential setting, Vivienne became involved in a significant number of new activities subsequent to staff training (Figure 7.24). Prior to staff training her involvement in activities, apart from eating or food preparation, accounted for 9% of her time, whereas approximately 35% of her time was taken up with activities in phase two of the study.
This being the case, it is not surprising that Vivienne was the recipient of an increase in instruction giving by the residential staff:

obs#167  Vivienne is setting the tables for dinner. Sandra is in the kitchen passing things over the bench to her as they are needed. "Put those on Paul's table please."
Vivienne picks up the cups and says, "uh huh."
Sandra replies, "That's it."
Vivienne puts the cups on the table.
"Can you put that one down for Helen please?"
Vivienne takes the spoon from Sandra and puts it in Helen's place.
"One for you and one for Dean please."
Vivienne takes the spoons and hovers.
Sandra says, "One for you."
Vivienne puts the spoon down in her place.
"And one for Dean."
Vivienne sets it down in Dean's place.
This continued until Vivienne had set places for the other residents.

Figure 7.24: Availability and nature of activities for Vivienne in the residential and vocational setting over the three phases of the study

The results from the environmental checklist section: "Activities" confirms that Vivienne was the recipient of many more choices of activity and that she, more than her peers, was able to choose whether to engage in activities or not. The activities that were available seemed to catch Vivienne's interest and, to a greater extent than her peers, help was available should she need it. In addition, staff seemed to use activities as opportunities for communication with Vivienne although
the bulk of the activities in which she participated in the residential setting tended to be one on one. Where possible however, residential staff did facilitate turn taking with other clients.

After staff training, staff seemed to regard Vivienne as being more able than previously. This resulted in her being allowed to complete a greater number of actions unaided:

obs#143 Vivienne calls out to get her banana peeled.
Jane takes it saying, "I will just start this, you can do it."
She passes the banana back to Vivienne who finishes peeling it and eats.
She then picks up the milk jug and says, "Uh huh."
Nobody responds.
She taps the table top with her knuckles and says, "Uh huh."
Nobody responds.
She pours the milk into her cup and then pours her own tea.
She looks all around her and then picks up her cup and drinks.

Vivienne's communication in phase two and phase three.

Vivienne was, of all of her peers, the most obvious in her communication with others. She would stand beside things she wanted, she used real objects, she vocalised and gestured to people and she was insistent. Yet, as has been seen, this did not help her a great deal in terms of getting her needs met. Instead she was seen as challenging and demanding. Subsequent to phase two, this changed for the better (Figure 7.25), particularly in the early stages in the vocational setting. This increase in the recognition of the communicative potential of behaviour seemed to have a positive effect on Vivienne also:

obs#137 Vivienne is eating a biscuit, she spits it out and calls, "Na na na."
Jane says, "What is the problem?"
"Na na na."
"What do you want?"
Vivienne does not respond.
Jane says, "Did you want some orange juice? Is that it?"
Vivienne smiles. (This was such an unusual event that the observer highlighted Vivienne's response).
As was the case with Dean, Glenn and Helen, once residential staff had access to an augmentative communication strategy that they could use with Vivienne, they began to use it extensively. Staff, along with Vivienne, were introduced to a communication book. The book began with a menu page on which Makaton symbols (Walker, 1991) and words represented the range of communication options available in the rest of the book. In Vivienne's case, she had access to further pages containing symbols and words for food, drinks, personal care, activities, feelings and directions. Included on this and all other pages were squares with the words, "Yes", "No", and "Maybe". Books were made for both the vocational and the residential setting and contained options relevant to that setting. With some physical support at the elbow, and with positive reinforcement and encouragement, Vivienne would be asked what she wanted. She would choose from the menu page, the
book would then be opened to the appropriate page and Vivienne, with the same support, would make her choice.

For a time after the introduction of this book, Vivienne would indicate her need to communicate in the ways she always had. Staff would either get, or ask her to get, her book from which she would then indicate what she wanted:

obs#146 Vivienne has been painting. She pushes back her chair and stands. She moves behind Jane and says, "Na na na." Jane says, "What's the thing now, did you want to sit somewhere else?" "Na na na." Suzanne hands Jane Vivienne's communication book. Jane says, "You show me." Vivienne points to one of the symbols on the menu page. "Ok," says, Jane, "I'll just get the right page, hang on." Jane explains what all of the symbols mean. Vivienne taps a symbol hard. "Ok, are you a bit cold or hot?" Vivienne taps again. Jane says, "Ok and helps Vivienne off with her painting coat. Jane is called away and Suzanne says, "Do you want to hang this up?" Vivienne passes Suzanne her coat. Suzanne says, "Ok." She goes and hangs the coat up.

In the months following, Vivienne began to use her book extensively. She would take it to selected people to let her feelings and needs be known:

6/12 Vivienne has started to go and get her book and ask for a drink. Catherine has seen this happen two or three times now. She also said with her book that she was "really happy" and that she wanted to go to town shopping. Catherine described her as quite settled with respect to her behaviour.

Over the period of the next few months Vivienne took control of the use of her communication book. As her skill increased, and as the staff who worked with her increasingly adopted the use of the strategy, the behaviours she previously used that were described as difficult also decreased. In addition she began to use multiple pages in order to formulate longer messages. On one occasion she used the "feelings" page to say that she was bored and then turned to her "personal care" page to indicate that she was tired. However, when she went and got the vacuum cleaner, her staff person recognised that she was saying that she was bored and wished to clean her bedroom. This example also illustrates the way that she began to use symbols to convey multiple
messages. In this case the symbol for "I'm tired" began to be used to indicate her bedroom.

**Summary.**

Vivienne seemed to need considerably less support than her peers to communicate her needs. This was illustrated in the baseline phase by her insistence on getting the support she needed. Subsequent to staff training, and particularly with the advent of her augmentative strategy, the awareness that staff developed of her communication style facilitated the success she enjoyed in getting her needs met.

Staff in the residential setting began to use her communication book extensively but they also increased the degree to which they responded to the behaviour that she had always used to get some attention to her needs. In tandem with the book, they increased the degree to which they responded to the opportunities she created to 44%.

Vivienne engaged in a significant number of new activities in the residential setting and while these created many opportunities in which communication could take place, staff increasingly gave Vivienne instructions on how to complete the activities in question. Outside of these instructional times however, general social interaction and information transfer created a significant number of communications between Vivienne and staff. In the vocational setting, staff decreased the number of directions that they gave to Vivienne, maintained the social and etiquette type interactions and increased information transfer.

While it has been shown that Vivienne was to a large extent, mistress of her own communication destiny, she still relied on staff to interpret her behaviour as having communication potential. The differences in the responses from staff in both of the settings in which she participated illustrated the extent to which Vivienne's communication success relied on others.
Interviews with Staff

The semi-structured interviews reported here were completed with the staff in both settings over a period of three days. Staff were asked about the length of time they had been in their jobs, what work experience they had had prior to beginning work and the qualifications they had that they felt were relevant to their field of work. Understandings of the missions of the respective organisations for which staff worked and their role in the preparation of plans and programmes to meet individual needs were also sought. The second part of the interviews related specifically to the beliefs that staff held about the four individuals in this study. Staff were asked whether they felt if each participant had any strategies with which they communicated and what they were. They were also asked their views on the goals of community integration and participation for Dean, Glenn, Helen or Vivienne. The final part of the interview asked staff to respond to a number of scenarios in which a "good staff person" would be working with one of the disabled participants and to identify what their focus would be.

Once completed, staff were asked not to discuss the interviews with their colleagues until such time as they had all been completed. All of the interviews were completed by either the researcher or one of the research assistants who had completed the observations described previously. Each interview took from 30 minutes to one hour and was tape recorded. All of those people interviewed were then given written transcripts of their interviews. They were free to make any comments or alterations to their transcripts at this time.

The major themes emerging from the interviews are presented here according to the format of the interview guides described previously. Differences in action, attitude and beliefs between the settings and the individuals working in those settings are also discussed.

Of the 15 interviews completed, seven were with the staff of the vocational centre that Dean, Glenn, Helen and Vivienne attended and eight were completed with the residential staff. In the vocational centre, the Manager, the Assistant Manager and the Cleaner/Caregiver...
worked between 8:00am and 4:30pm daily. The other staff all worked from between two to three days per week. One other member of staff only worked when the centre was short-staffed. In the residential setting the Manager worked a regular day shift from 8:00am to 4:30pm whereas the senior staff members and the rest of the staff all worked on one of three shifts over 24 hours. One other staff member who was interviewed worked on an on-call basis.

**Background and Training**

Few of the staff members in either setting had training that was specific to the work that they were doing. The Manager of the vocational centre was a recent occupational therapy graduate but he felt that there was minimal input in this course to prepare people to work with individuals with severe disabilities. The most relevant experiences were:

Int#1b/2/3 in our second year of training in a particular course component to do with the origin of dysfunction, so it would have been looking at particular more individual medical-type things but also looking at wider things as well as to what people's environments and expectations and all those sorts of things will actually end being able to do and not do. And we had some input as far as some sessions that we (the students) ran actually organising a whole range of activities for people that (we) would have brought in, who were ones with an intellectual disability...And we also had experiences where we were allocated particular disabilities ourselves that we had to live with for a certain time...I was given a disorder of the lower abdomen which meant that I was regarded to be incontinent and needed to use urodomes and kanga continence pants at night and all the rest of it, so yeah, we did all that sort of stuff too to get the feel of what it was actually like to have to experience that sort of thing.

A staff member in the vocational setting had been a primary school teacher. She had also completed a degree in education. Along with another member of that staff who had a social work qualification and a degree in education, she had completed one paper on the inclusion of people with disabilities in schools. Two vocational staff members had been nurses, although one of them had not completed the training and they had both held supervisory positions in playcentres for pre-school children. Two members of this staff were completing a course specifically related to supporting people with disabilities and two others had worked as nurse aides at the local psychiatric hospital prior to its closure.
The residential Manager was trained as a psychopaedic nurse and had recently completed university papers in health studies, psychology, sociology and education. One staff member had been a carpenter and another had begun an occupational therapy training course but had not finished. Four of the residential staff interviewed, including the Manager who had been in charge of a ward, had worked at the psychiatric hospital prior to closure. They had all known the disabled participants at that time. Of the other staff, two had been domestics and one a physiotherapy assistant. Among the remaining staff, one had had experience in working with the elderly in rest homes and the other had provided foster care for a number of children.

Many of the people who were interviewed seemed to have taken on their current employment without much thought. Three of the residential staff reported that they had been attracted to the work simply because they needed a job. However, they had all had some contact with other members of staff which had helped them to decide that this field of work could be something they might enjoy. Before starting work, one staff member had been a little hesitant about whether she would enjoy contact with people who had disabilities and another, a vocational centre worker, had admitted to being quite fearful about the work. She had been especially worried about contact with Glenn or Vivienne who could be quite physical if upset.

The vocational centre was a part of a Trust (a not for profit organisation) that was run by a local church. All of the staff in the centre were members of the church and had been attracted to the work as a result of either direct contact from the original manager or through advertisements in the church newsletter. Three of the staff had begun at the centre as volunteers, mostly assisting around the feeding and cleaning up routines. As vacancies had arisen, they had been offered paid employment. One of these staff had remained "a fill in" (Int#2b/1), only working when required.

The residential Manager had been approached on behalf of a trust that had been set up by parents and professionals. This group of people wanted to establish "the Harrods of residential services" (Int#3a/9) for their family members. Along with trust members she had:
Int#3a/9 read the literature and kept up with moves in the area, so I was really keen to come and be at the forefront...I had a vision of what I thought things could be like for people, and basically what things should be like for people.

Like her boss, another member of the residential staff:

Int#6a/1 really wanted to make a difference. I saw a lot of things at (the institution) I didn't like and the way some of the guys were treated and I really thought that it would be nice to be able to have a chance to make a difference for them and with them.

The residential staff who had made a conscious decision to work in this field all came with the view that they wished to change things for people and wanted to be "able to make a difference for them and with them" (Int#6a/1). Three of the other residential staff who did not have a similar vision when they started commented on how much they now "loved" their work. By contrast the vocational Manager had seen:

Int#1b/2 real potential here to be able to work with people and to extend the clients that come in here...(the vocational setting) probably needed someone to come in who could actually do some thinking about what happened programme-wise.

Other members of the vocational staff had said that they had had an interest in working with people with disabilities. One of them said that he'd "always been interested in sort of helping people" (Int#2b/1), regardless of the situation. This feeling was shared by a member of the residential staff who had become friendly with a man who had lived in the local institution. This contact had always been positive and had prompted the desire for a career change.

During our discussion the residential Manager made the point that training was one of the essential elements in providing a high quality service:

Int#3a/10 I actually think now that we could be doing a lot more...I think that if we could have a much higher staff ratio and if I could pick the staff, which obviously you know, and if I could have the staff that I could afford, then I think I could make things a lot better.

Question: You mentioned about being able to pay your staff more too, so you'd be looking maybe at people who have more training?

More training, yeah.
Significantly, many of the staff members interviewed in the vocational setting had been to workshops and in-service training programmes on the use of Makaton (Walker, 1991) signing and symbols. In addition, staff in both the vocational and the residential settings had completed introductory courses on behaviour management and three staff had done courses on the assessment and development of communication strategies for people with severe disabilities.

**Role of Staff**

Staff in both settings had varying understandings about their roles and not surprisingly, different emphases depending on their situations. Both Managers felt that they had clear leadership roles within their respective organisations. The vocational Manager saw himself as:

> Int#1b/3 someone who basically has overall responsibility for developing the programme and evaluating it along with input from others, seeing where things are at for the particular individuals here and keeping notes and records and all that sort of thing and developing particular individual plans for people.

The most important aspect of this work was seen as being:

> Int#1b/3 trying to keep a focus -what we're doing with people and why so that it doesn't become a let's do something for the sake of it sort of thing or a glorified baby sitting service...

The residential Manager saw her role slightly differently:

> Int#3a/10 I think I'm a leader in terms of a role model for the staff and in terms of setting the direction for the staff...I still have that hands on, where I am a teacher and a friend and confidante to the residents and an advocate for them.

She saw her hands-on work as the most important aspect of what she did and that without that, staff morale would suffer:

> Int#3a/11 I think you have to keep coming back to that ... think it's too easy to forget how difficult it is actually to do things at a very basic level. And how frustrating it is when you don't see rewards, when you don't see the changes or they come so slowly that you actually sometimes need someone to point out that there's been changes.

I think the hands on stuff is the most important. But, so I see that as the most important but I see that I have to meter that out so that when I actually do hands on work with other staff or with residents I have to actually be very good at what I do...
One of the senior residential staff saw that she had to act as a role model for the staff. However, like the other senior, her work was focused on her clients. The focus for both of these women was:

Int#5a/1 ensuring all the residents have their basic cares taken care of...I really try and work on making them as independent as they possibly can, to reach their full potential, so yeah, getting them out into the community, getting them to do as much as they can for themselves.

Another residential staff person encapsulated the comments of her colleagues in saying that her work was revolving around "the guys":

Int#4/1 to try to get the guys away from the institutionalised type of residence...more personal attention and also they can get into the community.

It was considered "really important" that people were seen to need access to choices. In general, it was felt by the residential staff that in relation to their clients they needed "to be there for them and help them." The Manager noted that she wanted people "just to have good lives...to have the opportunity to know how to enjoy themselves" (Int#3a/12). To this end, most of the residential staff felt that they had a hand in the decision making process. Interestingly, the Manager did not see it as her role to set the programme that ran in the residential setting, nor did she attend the individual planning meetings held regularly for each of the residents. She felt that although it was her role to set the tone and direction of the service, it was the responsibility of the other staff who had much more hands on contact, to do the individual goal setting and general planning. As a consequence of her actions, the Individual Programme Plan or individual plans were familiar to everyone as were the major goals for each resident.

Given the comments from other staff, this management style appeared to have the effect of empowering staff to take a much more active role in setting up programmes than they otherwise might have. One staff member had set up a group to go bowling with her. Another had a group of people that she took to the local country and western music club. Other members of staff, often in their own time, regularly took residents to the local pub, to concerts and to other local events.
There was direct involvement in the development of the programme in the residential setting by the residents themselves. Individuals would ask to do things or to go on visits of one sort or another. In addition, staff would look for the things that appeared to interest the non verbal residents and alter the programme to meet their needs.

In the vocational setting, staff generally saw that they had a responsibility among other things, to teach their clients new skills:

Int#4b/1 We have a goal and that is to provide an opportunity for the people that come to learn new skills and to enjoy being a part of the wider community, having new opportunities to get out and about and for themselves.

Management in the vocational setting was seen as amounting to sorting "through the Individual Programme Plan" (Int#1b/4) which was described as being about "the nuts and bolts of people's everyday lives" (Int#1b/4). Some staff felt that they had an input into what happened but others were not so sure. One person who had only recently begun full-time work had not heard of the individual plans, nor had another who worked on a casual basis. Another reported:

Int#6b/3 Because I mean there'd be times when they've held the IPP up there without us being there (at the local hospital where some clients still live), well you know and at times I find it's not consistent what we do here with what they do and they don't communicate things to us very well. I guess sometimes they're unrealistic, the goals that are set, but with some of them they're also quite small, the goals, but then, that's how it is with people that we're dealing with.

Generally though, and within the constraints of the Individual Programme Plan, the vocational staff saw it as their role to develop relationships and to build the self esteem of their clients. The way to achieving these goals however, was very much through the "fulfilling of particular needs that people have or developing particular potentials" (Int#1b/4). However:

Int#7b/2 Some people probably get a lot more choices than others due to where they're at and some people probably don't get nearly any choices at all and that's due to the same communication difficulties, yeah you could ask them what they want to do but because you don't get a great deal of response it's very hard to know whether they really want to do that or not.
As a consequence of the pressures on the programme there was an awareness that:

Int#1b/4 ...there will often be times where there's not a hang of a lot happening with people and I sort of see that there are quite a few gaps where we could be exploring different options and things...I see some of those getting out and about things as being important because otherwise what can tend to happen is that this place becomes another little mini ghetto

The Manager of the vocational service commented that the philosophy of the service had been based on the premise that people with severe disabilities were likely to do very little and that their progress would be slow. As a result of this stance, few goals had been set for the organisation and little was expected in the way services were provided. Moves to change this set of beliefs were seen as urgent.

**Community Integration and Participation**

The residential manager identified the difficulties that many staff faced when working with Dean, Glenn, Helen or Vivienne:

Int#3a/14 I think that (while) they do seek other people's company...it's very hard to engage them sometimes in any activities...sometimes they are lookers-on you know, rather than participants, and I think that because they are not always so good at joining in that becomes a lot harder for staff, staff tend to lose that focus too and tend to think well, so long as they're there and you're doing something it doesn't matter, whereas I would really prefer that people tried to, not make them, but involve them more. Glenn and Vivienne are pretty good at joining in things, they have to be cajoled at times, but, no, they're pretty good at joining in things, actually, in fact it's surprising what they will do.

The vocational manager seemed to think that it was acceptable for people to be passive participants in activities. It was seen that there was a great deal of work to do with each individual in order that they could gain from their inclusion in such community based activities as swimming, visiting the supermarket, museum or library or going on walks. In the case of Dean and Helen, the Manager was unsure how much they took in but that their presence in the community would provide the impetus for stimulation and interaction. There was also a feeling that Glenn and Vivienne needed to feel safe when they were away from the vocational centre and that this sort of learning had to occur before there could be any expectations of their involvement in
activities. Most of the vocational staff seemed to agree with the Manager.

Although there was some acceptance in the residential setting that the community integration and participation goals for Glenn and Vivienne would be quite different from those for Dean and Helen other staff were adamant that community integration and participation was "why we're here" (Int#6a/2). There was the feeling among these staff that perhaps some of the residents did get less out of community based activities, however, this was no reason to deny those people access to participation in such activities:

Int#6a/3 it's very important that they participate coz otherwise they just sit quietly in the corner and not participate, how can they find out anything if they don't participate.

A residential staff person echoed many of her colleagues when she added:

Int#2a/3 the community should know they're not what people think these ones are

Despite these beliefs, staff did admit that they did more with Glenn and Vivienne in respect of community based activities:

Int#5a/3 then when it comes to going out although it's harder to get Helen and even Dean to participate actively I suppose, they wouldn't go out as much as the others can, I guess it's just, yeah it's the effort, it's probably more effort for them to, and for the staff.

In the residential setting there was a focus on training in home based domestic skills and on community integration. However, it was expected that the routine of the house, of which these activities were a part, would continue whether or not they were spelled out in an individual's Individual Programme Plan. In this setting there was also a focus on the creation of a home environment. To this end, it was important that individuals were not coerced into doing things that they had not chosen and that they:

Int#5a/2 have a little time once they get home from work and that's really just a relaxing time for them...we don't really push them to do anything, we suggest, we ask if they want to be doing anything.
The vocational staff generally saw that it was particularly difficult to include either Helen or Dean in activities, community-based or not. The staff all felt that they needed to provide one-to-one assistance at all times and that if they did not then the activity would have little value:

Int#Sb/3 You've sort of got to be -you can get on really well when it's one-to-one but as soon as you move on to help someone else they can lose their focus, lose interest, get up and move off, yes it's a difficult one but it's important that -it's very easy to leave someone, just sort of not to do much with them all day, it's what I find difficult...

When asked about community integration, the vocational staff all felt that it was important, regardless of the level of individual participation. All of the staff commented on the "improvement" and "changes" in the disabled participants as a result of their involvement in community activities.

During the interviews, staff were asked to comment on how they felt a "good staff person" would respond to Dean, Glenn, Helen or Vivienne in the context of a range of activities. All of the activities discussed provided opportunities for interaction, some in community settings. These activities were also activities in which the participants regularly engaged. However, all of the staff focused on the satisfactory completion of the activity at hand to the exclusion of any interaction with other clients, residents or staff. Even when staff were asked a supplementary question about their clients’ participation with peers or staff, they saw activity completion as the priority.

When asked about the inclusion of Vivienne in a table top game or her participation in an art activity for instance, staff described how they would attempt to acquaint her with the rules of the game such as taking turns, or how they would ensure that she had the materials she needed to complete the activity. Similarly, asked about supporting Helen during a meal, staff talked about informing her of what was happening at each step in the process and about encouraging her to become more independent.

In the absence of any comment regarding potential interaction between Vivienne and her peers, staff were asked a follow up question. A
member of the vocational staff suggested that interaction could be established by:

Int#1b/8 encouraging her to come and join the group at the table. By perhaps getting her to look at what somebody else, next to her is doing and encouraging that person to interact with her and talk to her if they are able. By demonstrating quite clearly what you want her to do and giving her the chance to do it and heaps and heaps of verbal praise. If she wants to move away say that that's OK, that she can do it if she wants to but encouraging her to come back again because we really want her to be there.

Similarly and unless staff were asked directly, choice making or access to choice making featured little when they commented on the scenarios involving Dean, Glenn, Helen and Vivienne in commonly completed activities.

Choice Making and Communication

While there was universal acceptance that Glenn and Vivienne exercised choice, there was less certainty over Helen or Dean's ability to make decisions. One staff member was "90% sure" (Int#7a/10) that Helen did not make choices, or that they were so inconsistent as to be suspect:

Int#1b/7 I'm not so sure where things are at with that. The main choice taking that I would see Helen involved in is actually when she will move up to someone or want to be close to them and smile. I could be as blind as a bat but I haven't really seen it -sometimes it's difficult when you are close to people to sort of pick up on some other stuff.

Another said that Helen was making more and more choices, however, she was unsure whether it was Helen's skills that were developing or her own observation skills:

Int#5a/4 I mean I think Helen's starting to make more definitely starting to make more choices but I think that's with me because I'm looking for them, for her making them instead of assuming that she can't make a choice and looking for her making choices and I'm picking up on them.

As a consequence of this indecision about Helen's choice making skills, it was felt that Helen was given few opportunities for choice. Dean by comparison was known to make some choices, mostly negative. One staff member commented that she felt that Dean did make choices but that she, like her colleague mentioned previously, was often unaware of what they were.
Staff had the least difficulty in identifying the choices that the four individuals made around concrete objects like food. In respect of Vivienne:

Int#5a/4 We're offering her does she want to go to the movies, does she want to go for a walk, well she can't verbalise it back so we don't know what the choice is that she's making ... when it comes to the likes of spreading anything on a bread then she can make the choice and we can recognise what the choice is that she's making but at the moment we can't recognise what any other, the other choices because we're only verbalising, yeah.

Another staff member commented:

Int#6a/3 I've gotten to know Vivienne pretty well over the last three years and I think that she makes it pretty apparent at times what she wants but there are still times when you haven't a clue.

Others agreed about Vivienne's communication skills, however they sometimes had difficulty in understanding what Vivienne wanted. Nobody in the residential setting was in any doubt about the clear link between Vivienne's behaviour and her need to communicate:

Int#4a/3 I think if she could communicate in some way, yes definitely. I think it would stop the tantrums, the screaming to a certain degree because this is, let's face it, she's lived for years and the only way she can let people know what she wants, so, and I think if she could get across what she wanted then she wouldn't have to do so much screaming.

Staff seemed to have the fewest difficulties in understanding Glenn's choices but they preferred his choice making to be verbal. Most often, choice making activities seemed to take place around food:

Int#5b/3 that's how we find it easier to get him to verbalise. (He is) able to do it but has to be pushed. We have not had a voluntary response from him in actually verbalising, we get voluntary responses if he's -a shrill noise that will come voluntarily but to actually verbalise something it's usually because we've given him a choice and told him we'd like him to tell us what he would like and played dumb.

There were however, situations that vocational staff highlighted during which Glenn did make his preferences well known:

Int#6b/5 Like the other day I came in here I was going to get a jigsaw puzzle out for him to do and he was sitting and I don't know whether it was because he didn't want to do the jigsaw puzzle or because I just upset him, he likes everything neat and tidy, because I'd upset everything on the shelf and
made them uneven. He rushed over to the shelf and pushed them all back in and then he grabbed my hands and he wouldn't let me put my hands back and he really fought me for quite a while, just pushed my arms away like that...but when he went to afternoon tea and he wasn't in the room I got the jigsaw puzzle out and put it on the table and tipped it out for him and when he came through he saw it on the table and he sat down and he did it.

Another staff member commented further:

Int#4/3 I'm sure it could be enhanced more (Glenn's choice making skills) He's often very reluctant but if you -just, I guess, goad him along a bit -he'll come and do it and once he comes and joins in he seems quite happy to join in, it's just a matter of getting him up and going in the first place often. So, I suppose in that respect I often don't give him a choice. If I feel like it's something that he would enjoy I sort of encourage him along until I get him there but once he's there, if he doesn't want to do it well OK, that's his choice.

There seemed to be a general consensus among the staff that the greater the difficulty people had in interacting with others, the less that individual understood of the world around them. In relation to Helen, staff saw her as very limited in her comprehension:

Int#1b/8 I don't know that her (Helen's) receptive verbal understanding is any good

Int#4b/4 She (Helen) does seem to be aware of people around her, activity going on and that sort of thing but it's a close up thing like that, I wonder whether she does -how much of that she does take in.

As a result of her perceived lack of ability there were few expectations on her to make choices. This appeared to result in a reduction in the opportunities available to her to make choices about many of the things that happened to and around her. Similarly, Dean was not expected to make the same sorts of choices as either Glenn or Vivienne. As a consequence, when asked about the sorts of emphases staff would have on community activities for Dean as compared to Glenn, his presence, a small physical contribution and opportunities for observation were what was expected of him. By contrast, there was an expectation that if in a supermarket for instance, Glenn would choose items from the shelf, pay the money, perhaps say thank you to the cashier and then carry the groceries to the car.

In respect of the specific communication strategies that individuals used, staff had a number of ideas of when either Dean, Glenn, Helen or Vivienne were attempting to interact with them, even if they were
often unsure of what the message was. Glenn, like his peers was most frequently seen to make negative choices when offered them:

Int#2b/4 Well yes, like sometimes you'll say do you want to do a puzzle and he'll put his hands in his ears and close his eyes or else you'll say come on Glenn, we're going to go and do a puzzle and he'll (I'll?) go up and get it and before you've got the puzzle out of the shelf he's up there stopping you.

In addition, Glenn was perceived to need pushing in order to communicate at all but once he was interacting with staff he was seen to be quite capable:

Int#2b/4 considering he doesn't talk he does very well.

Like Glenn, staff felt that it was reasonably easy to see when Vivienne was attempting to make her point:

Int3b/4 Oh yeah, yeah. Very strong lady, which is nice to see and she'll make her choices very clear...(by)...grunting, moaning, um yelling, stamping, hitting

Int#6a/3 I think it's very good, especially if she doesn't want you round

There was a feeling that Vivienne's skills were as good as they were as a result of the opportunities she had for making choices:

Int#1b/6 I think some of it has to do with, if you're providing her with a whole lot of things that in her repertoire things that she can do, then that gives her more choice for being able to do what she wants to do.

A number of staff had noticed how Vivienne had changed in the time that they had known her. Once, if she had wanted to do something and staff were not able to assist at that time, she would have become upset. Several staff reported how now, she would happily wait until staff were available. As a result of this development, staff perceptions of Vivienne's ability had changed:

Int#4a/3 Vivienne understands every word you say to her, every word but it's nothing, the only thing with Vivienne is you can't tell her two or three things at once otherwise she gets muddled but if you tell her one thing at a time Vivienne understands every word.

Things were not so clear however, when it came to describing the communication skills that either Dean or Helen possessed. One staff member felt that:
To a certain degree, yes. He knows what he wants...If Dean doesn't want something then he'll let you know... As far as communicating, I think it's by his actions.

However, there was a feeling among a number of staff that one of the biggest blocks to Dean's communication was his perceived laziness.

Helen was perceived to make both positive and negative comments although staff were generally of the opinion that her communication skills, as a result of her understanding of the world, were very limited. One person felt that Helen really only made choices about people:

she will go up to them and smile and clasp her hands and often shake around, shake the other part of her body...if she doesn't like someone she will actually go up to them and almost wave her arms around and sort of grind her teeth and not look particularly pleased to see them.

Other staff felt that Helen was at times, quite purposeful in her communication:

though Helen if she doesn't want to go to the toilet she'll let you know she'll come to a, you'll be trotting along there with Helen and she'll come to a dead halt and she's like a brick wall.

Conclusion

Staff generally felt that Helen and Dean were much more limited in their ability to communicate than were Glenn and Vivienne. Helen was seen to be restricted by her intellectual limitations and Dean by his laziness. By contrast Vivienne and Glenn were seen as more able to communicate and to make choices. In particular, Glenn was seen as a candidate for speech, despite only ever using limited speech when prompted. Although staff recognised that the participants did have a range of communication strategies that they used to communicate with others, staff also considered that the participants' ability to understand their world was impaired. Staff also believed that to a greater or lesser extent the participants lacked the skills to communicate, and that in some circumstances, they could not make choices. As described already, although there was recognition that Helen expressed preferences about who she wanted to spend time with, one staff member "could have been as blind as a bat" (Int#1b/7) but had not seen her making choices!
The perceptions held by staff resulted in few opportunities being made available for clients to make choices. In the vocational setting, Glenn was offered choices around food, where he was most likely to verbalise and with jigsaw puzzles, the only other item mentioned by staff. In the section of the interview in which staff were asked to comment on how a "good staff person" would respond to a number of hypothetical situations, only four staff identified choice making as a goal for Glenn. Interestingly, three of the four commented that the choices available would be between two items or within a very restricted range, for instance one staff member noted that Glenn could "choose the biscuits" (Int#6b/7).

While it would seem that the staff were aware of a number of the communication strategies that individuals used within the context of established interactions, those strategies identified mostly concerned the making of negative choices. With the exception of Helen's social communication, staff did not describe any strategies that individuals might use to initiate or maintain an interaction for anything other than the satisfaction of basic needs. Similarly, although community integration and limited participation were identified as important for all of the participants, the goal for any of the activities described was basic skill building and the satisfactory completion of those activities. Unless asked specifically about the use of activities for encouraging interaction between the four disabled participants and their peers or the public, interaction or communication was never mentioned.

When asked about the role of staff, everybody, except some of those with leadership roles, identified their most important priorities as their clients. In the residential setting staff saw that they needed to "be there" (Int#7a/1) for the residents. In the vocational centre, staff had a clear perception that their roles were as support people who were not there doing things for them but ensuring that everything you do with them is for their benefit that they're going to get the utmost out of it.

"Being there" for the disabled participants seemed to consist of the provision of care for such things as food, shelter, and health. The
vocational staff also saw themselves as having much more of a training focus to their work than the residential staff. While the residential staff did have a concern with developing the skills of their clients, they were concerned to do so within the context of purposeful activity and for people to have fun. The vocational staff were also concerned to develop the relationships they had with their clients but they had a clear focus on teaching and training and on ensuring that the programme reflected people's needs and goals.

Both the residential and the vocational staff included a number of people who either had, or had begun, a health related qualification (four staff) or had worked in an institutional or medical setting (eight staff). Only four staff were from fields outside of the health industry. However the majority of the 15 people interviewed (nine) had no training, beyond that provided irregularly as inservice.

Staff Training and Group Interviews

Subsequent to the collection of data and the preparation of individual communication profiles, a staff training session was held during which staff were presented with the communication profiles that had been prepared for Dean, Glenn, Helen and Vivienne and they were provided with feedback about the findings of the first phase of the study in each of their respective settings. At this session they also engaged in problem solving to identify ways in which they could change their own practices or modify their environments to support the development of communication with the four disabled participants.

Follow-up to this session was provided on a regular and on-call basis by the researcher. Contact was made at least weekly with the senior staff in both settings. At these times, progress was discussed with them and when requested, specific issues arising from the training were expanded on. In addition, staff were encouraged to focus on the communication behaviour of the four participants wherever and whenever possible. All staff were encouraged to discuss the findings of the study with each other and the researchers/observers or to seek clarification of any points with which they were concerned. Running records, coded
observations and the environmental checklists continued to be taken for the duration of phase two. In addition, working notes of informal observations and discussions were also taken.

During this phase and subsequent to staff training, a group interview was completed with the vocational centre staff. Staff in the residential setting could not be interviewed in this way as a result of rostering difficulties. As a consequence, a detailed discussion was held with the residential service manager who had canvassed the views of her staff. Staff were asked informally to talk about their responses to the feedback and staff training, how they saw their roles changing and any differences they had found in the ways that they did things as a consequence of this experience.

Concurrent with on-going support to staff and the collection of data, individual communication strategies were developed for each of the participants. These strategies were based on the individual profiles that had been written for Dean, Glenn, Helen and Vivienne. Once data collection was completed for phase two, these strategies were introduced for the disabled participants. Key members of staff (usually those with administrative responsibility for an individual's programme) were also instructed in the use of the strategies. They were then encouraged to use the strategy with the individual in question and once they became comfortable using it, to introduce it to other members of staff. As previously, staff were encouraged to ask questions or seek clarification should any difficulties arise.

Subsequent to the introduction of the individual communication strategies at the beginning of phase three, the researcher spent increased time in each setting working with staff and with Dean, Glenn, Helen and Vivienne. In addition to familiarising the participants and their staff with these strategies it was seen as important to model the use of the strategies in natural settings and contexts. For two months following the introduction of the augmentative strategies, running records, coded observations and environmental checklists continued to be completed.
Staff Training

The staff in each setting met separately to discuss the results of the initial data collection phase of the study. At the outset of the training sessions staff were asked to describe what communication was. All of the staff identified the following as being communicative behaviours:

• actions and expressions;
• verbalisations;
• eye contact;
• physical contact;
• seeking out another, physical proximity;
• stereotypic information, e.g. rocking, swaying from side to side.

Residential staff noted that:

> These sorts of behaviours are considered to provide opportunities for communication because they provide some information to the receiver which can then be responded to. A response can be any behaviour which occurs in response to a communication opportunity.

(Notes from staff training, Monday, 12 June, 1995)

Staff were then each presented with copies of the individual communication profiles and with the results from the environmental checklist. A detailed discussion about how each of the four participants attempted interaction within the context of their daily lives in each setting accompanied this information.

Subsequent to this presentation, staff were asked to identify strategies that they could use to enhance the success of the communication initiations made by either Dean, Glenn, Helen or Vivienne. The residential staff noted that:

> The residents are already responding to communication opportunities provided by the staff at a really high level so our energy needs to be directed more towards the communication opportunities provided by the residents themselves. Heightened awareness of the communication opportunities provided by residents will enhance the use of their individual strategies, when the time comes. As no one communication strategy will fulfil all the communication needs of the residents we need to be very tuned in to all of their ways.

(Notes from staff training, Monday, 12 June, 1995)

To this end, staff felt that it was important for them to try to:
close the gap between communication opportunities provided by the participants and responses given by the staff;

* increase the length of interactions between residents and staff.

They felt that they could achieve this by:

* looking for initiations and responses;
* giving time for responses;
* allowing time to look and observe the behaviour of the participants;
* acknowledging what has been observed, even if there isn't time to deal with issues immediately, always follow up as soon as possible;
* considering the noise level in the environment, identifying those noises that upset any of the participants and assisting people to either to deal with noise or to support some changes to ease difficulties;
* providing realistic choices about where people wanted to be, or what they might want to do;
* ensuring that the participants see that there is value in communicating, that their choices will be respected, that there is some point to communicating with others;
* focusing on the quality of the interaction rather than on the amount of communication occurring, eg. use meaningful questions and comments rather than streams of speech.

In addition to these items the vocational centre staff felt that it was important for them to:

* see activities as opportunities in which communication could occur;
* focus less on the completion of activities and more on interaction within activities;
* see that it was important that staff and clients spent time being together.

At the end of these training sessions for the residential and vocational staff an evaluation form was completed. Staff were asked to comment on their personal responses to the effectiveness of the sessions in terms of the presentation of information. They were also asked about the extent to which they expected the training session to change the ways in which they worked and whether the training had fulfilled their expectations.
Staff present at both sessions responded very positively to the information presented. All but two staff said that they did not have any prior expectations of what the information contained in these sessions might be. The two other staff were expecting to be instructed on the individual communication strategies to be used with either Dean, Glenn, Helen and Vivienne. All of the staff were very surprised by the quantity of interaction that the participants tried to establish with them and they felt that this new information and the strategies they had devised would change the ways in which they worked or interacted with the participants (See Table 7.9)

Table 7.9: Anticipated change in the behaviour of staff towards their clients as a result of staff training.

<table>
<thead>
<tr>
<th>Expectation of Change</th>
<th>A Great Deal</th>
<th>Quite A Lot</th>
<th>A Moderate Amount</th>
<th>A Little</th>
<th>Not at All</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Responses by Staff</td>
<td>3</td>
<td>7</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Thirteen of the 15 participants in the training completed this section.

Group Interview and Staff Feedback

One month after staff training the vocational centre staff were interviewed as a group for their feedback from the training session and follow-up. The Manager of the residential service was asked to facilitate discussions with her staff to the same end.

A number of staff reported that they had been disappointed that at the staff training sessions they had not been given communication strategies that they could use with the individual participants:

Int: so, there was this initial disappointment all round?
Staff: Well I thought that the strategies were going to be put in place on that night.

However, the fact that staff were not given individual strategies at the staff training came to be seen, by some staff at least, in a very positive light:

I see a real advantage in that because the way that we can tend to operate is that we can sort of tend to grasp around for ideas of things that we can do and we leap in and do it whereas I think the thing that being made to hold back actually then in a sense takes the power away from us and then invests
it with the participants so in a sense by not being given strategies immediately off but actually being encouraged to look at what they're doing and following that then that becomes the most important thing and I think that's an advantage.

Staff also expressed disappointment at their own behaviours:

I think with that sort of thing there can be the feeling that a bit of disappointment in yourself, myself, because there are all these sort of instances of communication initiated by these people that weren't picked up on so much. I guess in thinking that though I guess it's tempered with the reality of what it is to work here and that sometimes it probably takes time to stop and consciously be able to respond because often you are actually rushing round and doing the - and if you respond to everything that's happening around the place you'd never get anywhere...

Clearly staff were concerned about the number of opportunities for interaction that they missed. However, they seemed to continue to believe that any interactions they had with their clients could have a negative effect on their work. Nonetheless, from the discussions with staff in both settings there was an increased emphasis on interaction with others subsequent to staff training. However, the vocational staff particularly, felt that this interaction could not be at the expense of the need to "get the job done" or to complete those tasks seen as necessary to the running of the centre.

Despite this, staff were quick to point out that they had gained a great deal from the experience:

So, I sort of came away a little bit disappointed in that respect but as far as everything else goes I've really looked at the four people in a different light and I've got to know them better in the last five weeks than I have in the last year.

Interestingly, some vocational staff seemed to feel that the increase in their own awareness of communication had been matched with a concurrent increase in communication by Dean, Glenn, Helen and Vivienne:

I've found the people seem to be communicating more and I don't know whether that's the fact that I'm more aware of how they're communicating than I was before because we do not get the opportunities to sit down and watch interactions and see what's going on. Whether it's the fact that I'm more aware now of how the different people communicate or whether it's the natural progress they would have made anyway in that time, that's hard to know.
Other staff seemed to feel that it was their own awareness that had made the difference. Residential staff agreed with this perspective. All of the staff in that setting felt that they had become much more attuned to the communicative skills and strategies demonstrated by the four participants. As a consequence of this, they felt that their relationships had been enriched, that they were much better able to interpret the communication attempts made by the four participants and that they were, as a consequence, better able to provide the sort of supports that individuals needed.

In the vocational centre the staff had devised a plan whereby specific members of staff would work one-on-one with each of the participants at regular times each week. They felt that this period of time had made a real difference to the ways in which staff understood the communicative behaviours of the individuals they were supporting. Concurrent with this was an increased belief on the part of staff that each of the participants had an understanding about their world and that they could use their behaviour to effect change:

well I've been doing one-on-one with Dean and Vivienne and the surprising thing with Vivienne is the day that I don't do the one-on-one, at ten o'clock she's been walking round and seeking me out and when it first happened I just thought it was coincidence and didn't take too much notice but the next week the same thing happened and the next week the same thing happened...and days that I haven't got that one-on-one, she'll come in and sort of ask me, come on let's go and do something and I'll say no sorry I got one-on-one with somebody else today, there's always an outburst afterwards.

In respect of Dean's behaviour, a number of instances had been observed which seemed to suggest that he enjoyed teasing his peers:

I've noticed Dean a lot more...he must have a sense of humour, I wouldn't say what sort, but he, when there's people yelling and screaming and arguing he goes away to a corner and laughs about it.

There was a classic instance of him and Belinda, you know how Belinda jumps up and down all the time, well Belinda jumped up and he snuck in and sat in her seat. And then Belinda sort of turns around and oh dear so then she sat on the piano stool right next to the seat she had been sitting on, right near by, well I'll just sit here and Dean stood up as if he was gonna walk away and just stood there watching Belinda. As soon as Belinda stood up he sat down again and he did it several times. I don't think it was a coincidence.

This one-on-one time did not seem to suit all of the participants however. Staff felt that Glenn had rejected some of the increased
attention he was getting in these sessions. From the discussion with staff it would appear that Glenn had been looking at books with an individual staff member and helping in the kitchen. He had also been introduced to the computer. However, none of these activities seemed to appeal to him a great deal. As a consequence staff saw him as "electing not to participate". Conversely, he began to enjoy his time at the pool. He was very anxious to get into the water and to spend time with staff while there. Interestingly, while staff saw Vivienne's "outbursts" as being indicative of a new confidence in herself, they saw Glenn's behaviour as demanding:

Down at the pool Glenn's demanding that the minute you get there he wants you to get in the pool with him and straight up to the deep end and he's not waiting...and if we try to hold him back he's, he can get quite aggro.

In the residential setting, staff felt that in the course of their daily work, they had become much more aware of the sorts of strategies and skills demonstrated by the participants. As a consequence, the quality of their interactions with the four participants had improved. They had deliberately not embarked on any new programmes to try to provide increased opportunities for communication. Instead, they had spent time at each of their staff meetings, familiarising themselves with the communication profiles written for each of the participants. In the course of their work they had also tried to be a great deal more observant of Dean, Glenn, Helen and Vivienne by taking a little time whenever they could, standing back and simply watching the things that they did. Having started to become very familiar with the strategies identified in the communication profiles that the disabled participants used, staff felt that the results from the first phase of the study were beginning to make a significant difference to their practice.

Staff had, subsequent to the training session, seen a number of changes in Dean, Glenn, Helen and Vivienne's communication behaviours. Some had recognised that this was as a result of their own awareness of the strategies they were using to attempt to interact. Others felt that such increases were as a result of the development of communicative skills in the participants. While staff in the vocational setting seemed to see that interaction and communication with their clients could not come at the expense of "getting the job done", they had responded to the training
they had received by initiating some one-on-one time with each of the participants on a regular basis. Within these sessions the participants were seen to be communicating their preferences. Interestingly, where participants were seen to be eager for more of what had been provided for them, they were seen to be increasing in confidence and skill. When, as in Glenn's case, his decisions about whether to participate in an activity were not congruent with what the staff wanted or felt they needed to do, he was seen as demanding.

**Summary**

This chapter has described the communication skills and limitations of Dean, Glenn, Helen and Vivienne. In addition to the difficulties that they experienced as a result of their impairments, the disabled participants were found to be handicapped by the environments in which they lived and worked. Interviews with staff indicated that to a greater or lesser extent, they did not expect Dean, Glenn, Helen and Vivienne to communicate or to interact with their environments to the extent that they did. Subsequent to staff training, the social, emotional and physical environment became a great deal more supportive in the provision of communication opportunities. The results have reported changes in: the nature of the relationships between staff and the disabled participants, the number and frequency of the communication opportunities available, the extent to which staff responded to communication opportunities the activities available to the participants following staff training.

Figure 7.26 presents the mean percentage recognition by staff of the communicative intent of behaviour in both settings across all phases of the study. This data reflects a central conceptualisation of the study that communication involves an interchange between communicating partners. The figure shows that in comparison with mean baseline data collected across 12 weeks, behaviour changed following intervention in the vocational setting. Two months later a replication of this change effect is evident in the mean increase over baseline measures of the staff recognition of the communicative intent of behaviour following intervention in the residential setting. Given the extensive nature of the baseline data against which subsequent change is assessed; that a
mean change reflects the data for each individual; and that the change occurs in each case when, and only when, intervention in the form of staff training took place, the results are interpreted as evidence supporting the proposal that staff training resulted in changes in participant behaviour.

Figure 7.26 Mean for percentage recognition by staff of the intent of the communicative behaviour of Dean, Glenn, Helen and Vivienne across all phases of the study.

Augmentative communication strategies for the disabled participants were introduced into the environments in which Dean, Glenn, Helen and Vivienne lived. The disabled participants required considerable support to establish and maintain the use of those strategies because of the severity of the impairments they experienced. Over the period that the observations continued to be taken, Dean, Glenn and Vivienne became a little more independent in the use of their augmentative strategies whereas Helen continued to rely on others to offer the use of the strategy once she had created a communication opportunity.

Significant differences between the vocational and residential setting became evident over the course of the study. The residential staff were
interested in developing relationships with the disabled participants, in having fun, and in being friends, confidantes and advocates. The vocational staff were, as a result of their role, concerned with training and with reaching goals. However, they felt that the gains that could be made by Dean, Glenn, Helen and Vivienne were likely to be modest and as a result, they were happy for them to be passive rather than active participants in the vocational centre programme.
CHAPTER EIGHT

Discussion

The analysis of specific aspects of communication behaviour that arise from the study of individual skills in experimental settings offers, at best, limited help in understanding the complex nature of communication. The others involved in communication exchanges are critical to the success or otherwise of communication occurring. Where people have few opportunities to engage with others and where others perceive that there will be few advantages to engaging with people with severe disabilities at all, it is hardly surprising that communication fails.

This study has shown the significance of the social and environmental context to the success or otherwise of communication between people with severe disabilities and those who support them. In addition, it has been demonstrated that by altering the context of that communication, changes to the quality and the quantity of communication that occurs can be achieved and sustained. This chapter discusses these findings in relation to the literature.

There are four sections to the discussion. The first: assessment in natural contexts, raises a number of issues regarding the assessment strategies used in this study as compared to those in the literature pertaining to severe disability. Traditional assessments have tended to focus on the ability of individuals to respond to requests, to make requests themselves and to communicate choices. Although there is now a recognition that people will use their behaviour to convey such information and that the inferring of the intent of specific behaviour should occur within the setting in which it occurs, the analysis of such behaviour has relied on the setting events and consequences assumed to motivate that behaviour. The contention of this study is that people learn and develop as a result of their interactions with others in natural social and physical contexts. Therefore, it is in these contexts that communication should be assessed. People have multiple opportunities to learn about communication and to develop their skills in residential, work and other social settings. It is with respect to those social and physical contexts that communication should be understood.
The second section discusses the role of the communication partner in the understanding of the communication strategies and skills that are used by an individual with severe disability. Communication is not a solo performance. The communication partner is central to the process and by his or her behaviour can either facilitate or restrict the opportunities of people with severe disabilities to use the skills that they have available to them. Clearly, if change to an individual's communication skills and strategies is a desired outcome of intervention arising from the assessment process, an analysis of partner behaviour also assist in the understanding of the conditions under which people with severe disabilities can best communicate but will inform the intervention process.

The effect of the behaviour of the communication partner on that of the communicator is the topic of the third section. To be effective, any communication strategy that an individual uses must be capable of being used for spontaneous communication by an individual with a severe disability. However, the support needs of individuals with severe disability, often mean that they are not in a position to use augmentative strategies independently. It is known that people with severe disabilities use numbers of behaviours with which to communicate, but that these behaviours may be restricted in form by the difficulties that they experience as a result of their disabilities. In addition, potential communication partners can affect the opportunities available to individuals with communication difficulties to communicate, to act spontaneously and to effect change to their circumstances. Discussion also focuses on the degree to which partners respond to the idiosyncratic strategies that people use and the affect that response has on the quantity and quality of communication.

The final section of this chapter concerns the intervention process. As already noted, assessment must include recognition of the ways in which the social and physical environment affects the communication process and how this will inform any communication intervention undertaken. The attitudes and beliefs held by those who live and work with people with severe disabilities have a significant impact on their behaviour towards their clients. In this respect, if there is a belief that
individuals are unlikely to have the cognitive skills to make decisions or even to communicate, then those holding those beliefs are unlikely to be receptive to communication when it does occur and are therefore unlikely to respond to communication initiations or to make choices available. In addition, an environment that is unstimulating, that offers few activities to individuals and that focuses only on the development of basic or self help skills is also unlikely to support the development of communication skills. The effects of these conditions and of those conditions that offer strong support for the development of communication between people with and without severe disabilities are discussed.

**Assessment in Natural Contexts**

The communication strategies used by individuals with severe disabilities are amongst the most difficult to understand of any people (Gleason, 1993). Few of these people develop speech and many experience difficulty with behaviour. Although it is now recognised that all behaviour, difficult or not, communicates something (Baumgart et al., 1990), there has also been an acceptance of the idea that difficult behaviour is indicative of the pathology of severe disability (Anderson et al, 1992). Therefore, the communicative strategies used by these people have been understood from the perspective that their communication would be restricted because of their cognitive difficulties. While cognitive limitations will certainly affect communication, it cannot be assumed that an inability to convey information is the same thing as the desire to gain information or skills. Not surprisingly, few people with severe disabilities were perceived to have the skills considered necessary for communication (Reichle & Karlan, 1985; Woodyatt & Ozanne, 1994) and were thus not considered candidates for communication intervention (Baumgart et al., 1990; Musselwhite & St. Louis, 1988).

Concurrent with the belief that the communication strategies used by people with severe disabilities would be restricted by their cognitive limitations was the acceptance that communication skills develop in the "normal" population in something of a stageist fashion, independent of the context in which that communication occurred (Jackson, 1993;
Rogoff, 1990). This assumption has meant that it was perfectly acceptable to study the communicative skills that individuals possessed in isolation from the environment in which they lived (e.g., Kiernan & Reid, 1987). Again, and not surprisingly, people with severe disabilities were deemed to have few skills with which to communicate with others.

Over recent years, there has been a shift in our understandings about severe disability and communication. A small number of research studies have highlighted that people with severe disabilities do in fact attempt communication at a rate similar to their non-disabled peers (Ogletree et al., 1992) but that their communicative behaviours may be subtle and easily missed (Peck, 1985). Other researchers (e.g., Baumgart et al., 1990) however, maintain that people with severe disabilities do not possess the means to communicate. It is ironic that on the one hand, these researchers accept that all behaviour communicates (Baumgart et al., 1990, p40), yet do not accept that some people, presumably because of the severity of their impairment, will not have the means to make choices and then communicate them (Baumgart et al., 1990, p3).

Alongside the recognition that people with severe disabilities do communicate, has evolved the notion that people develop as a result of their social interactions with other people and because of the supports available to them to become skilled communicators (Vygotsky, 1978). From this perspective, it would seem reasonable that if we wish to understand communication, it is essential that assessments of an individual's communication are made on the basis of the skills that individual uses in the course of his or her daily life.

This study has been unique in that it has set out to understand the communication skills used by a number of people with severe disabilities from within the context of their lived experience (Lucas, Weiss, & Hall, 1993). To achieve this end, the study utilised detailed observations over time, resulting in running records from which coded information was also extracted. In addition, a checklist was compiled of the supports available in the social and physical environment to stimulate communication in that environment. The collection of these data enabled the collation of the recorded sample of all of the behaviours used by target individuals and the supports available to
them. Central to this data collection was the belief that all behaviour communicates and that anything that an individual does in the presence of a potential listener or observer can convey information from which a communication interaction can arise. While it may be that a communicator does not intend that a particular aspect of his or her behaviour should serve a communication function, it nonetheless will. An uncontrived facial expression, a shuffling, round shouldered entrance to a room, or an expectant glance as another enters a room, all inform the observant onlooker of the skills that an individual possesses to convey information to another, as well as providing information about the moods, feelings and needs that a communicator has at a particular time.

The material that has been collected about the communication skills demonstrated by Dean, Glenn, Helen and Vivienne has clearly shown that they use a complex array of behaviours with which to initiate or maintain interactions with others. Dean most commonly used eye pointing and eye contact. He also used body positioning and vocalisation. Similarly, Glenn used eye pointing and body positioning effectively. He also used physical prompts, real objects and gestures. Helen used a similar range of behaviours with which to attempt communication. Like Glenn, Helen's communicative behaviours included those usually described as stereotypic and, like her peers, her communicative attempts were often unsuccessful.

This study has also shown that there are a number of difficulties that each person experiences and that make his or her communication skills and styles unique. Dean felt very uncomfortable in close physical proximity to others, Glenn was adversely affected by some types of noise, Helen found intentional motor movement difficult and Vivienne, for a number of reasons, was extremely fearful of new or unfamiliar people and situations. Within the confines of these difficulties however, and as has been shown, all of these people used numbers of idiosyncratic strategies with which to inform others, either intentionally or not, of their wishes, their needs and their comments.

Since it can be argued that communication development occurs in a social context, it makes sense that this is the environment in which it should be studied. This is not a new idea. The social and physical
environment has been seen as central to the development of an understanding about the intent behind the behaviours that individuals use in a communicative sense (Donnellan et al., 1984). It has also been recognised as central to the facilitation of communication between people with and without communication difficulties (Bogdan & Taylor, 1992; Crawford et al., 1992; Cirrin & Rowland, 1985; Musselwhite & St. Louis, 1988; Rowland & Schweigert, 1993). What this study contributes is that the understanding of the support provided by the social and physical environment is much more than just a setting from which intent can be determined or interaction enhanced, it is central to our understanding of the communication skills that each individual has. Communication is a complex social experience, affected by a whole range of variables. These include the relationships individuals have (Rogoff, 1990), the level of reciprocity present in communicative exchanges (Grenot-Scheyer, 1994) and the ability of others to see the communicative potential in behaviour (Donnellan et al., 1984), as well as those more obvious influences such as the activities available to them (Rowland & Schweigert, 1993) and the choices offered them (Reichle et al., 1989).

Traditionally, the communication of people with severe disabilities has been understood by an analysis of the setting events and consequences surrounding the behaviours an individual uses (Crawford et al., 1992). It has been suggested that if communication partners know the intent of a particular behaviour, then they will be far more likely to respond to that behaviour (Arthur & Butterfield, 1993; Cirrin & Rowland, 1985). On a number of occasions, it was very easy to see what the intent of either Dean, Glenn, Helen or Vivienne's behaviour was. When Edward moved away from Dean (obs#10) and Dean held out his hand to him, it was relatively clear that he wished for more contact, but when Dean paced up and down the hall (obs#29) grimacing and groaning while others worked nearby, his intention was not so obvious. In order to assess intent it has been considered important that the individual in question was engaged in joint activity with another (Cirrin & Rowland, 1985), or at least, interacting with another on some sort of level (Crawford et al., 1992). Without an active social context on which to base an analysis of intent however, the unconventional forms of communication (i.e., non-speech) used by many people with severe
disabilities would make understanding difficult (Bogdan & Taylor, 1992), if not impossible.

The literature has reported that an individual's behaviour outside of some sort of activity with another can serve a sensory function only (Crawford et al., 1992). If intent can only be inferred when an individual is engaged with another in some way, then it seems entirely possible that the behaviours used by individuals with severe disabilities to try to secure interaction will be dismissed as being sensory in origin and therefore non-communicative. This is especially likely when the literature has also reported that these people will respond only to a limited number of stimuli (Guess et al., 1993) and initiate communication to satisfy only a small range of contextually driven needs (Gleason, 1993; Halle et al., 1984).

During the baseline phase of this study it was shown that Dean, Glenn, Helen and Vivienne engaged in activities for only very small portions of the day and that they received responses to between 4% and 22% of the communicative initiations they created. Given this situation, if an attempt were made to identify the intent of Dean's behaviour when pacing in the hall, we would have to have assumed that it served a sensory function only. In making such an assumption, the complexity of his behaviour as a social being in a social context, whether engaged with another or not, would have been lost. It seems essential therefore, that as well as studying communication interactions when they occur, the things that people do that could result in joint attention being established are also critical, whether or not we know conclusively what the individual is trying to communicate.

Although obvious, it seems important, in the light of the literature, to make the point that a lack of response from others does not mean that an individual has nothing to say, nor will it reduce the need for an individual to make some point. The fact that Dean's pacing and grimacing and groaning were ignored by others in the same environment cannot be assumed to mean that he had nothing to communicate about. Similarly, the banging on the table that Helen did during an art activity of which she was an observer (obs#45) seemed to send a clear message although it too was ignored. Whether we know
what the message was, or can even hazard an educated guess does not seem to be the issue; the fact that Helen or Dean were trying to communicate something was important to our understanding of them, of their skills and of their needs.

It has been shown that Dean in particular found it difficult to be physically close to people and that he spent a great deal of time on the periphery of conversation, but he also showed that under some circumstances, he enjoyed close contact. Edward observed Dean very closely to see his communication, he responded to those initiations that Dean made, he made little use of verbal language, he used objects and he avoided touching Dean around his hands or face. Dean was obviously comfortable in his presence and sought his company. If this situation is compared to an interaction with Suzanne (obs#15) in which she tries to get him involved in an activity in which he could not participate (singing) we learn more about Dean.

There has been a suggestion in the literature that in respect of communication assessment, the relationships that exist between communication partners are confounding variables to be avoided (Carr et al., 1994). However, if Dean's relationship with Edward was not part of the assessment process we could have been left to assume that he was uncommunicative, that he avoided contact and that he was not capable of reciprocal interaction. If we had not considered his relationship with Suzanne, we would not have seen that Dean laughed and looked away, clearly bemused by the suggestion that he should "help her sing". These events, as well as illustrating the communicative skills that he had and the circumstances under which he could best use them, provide a glimpse of Dean's understanding of his situation.

Dean, Glenn, Helen and Vivienne have all been described as having severe intellectual disabilities. Indeed, earlier assessments of their adaptive functioning using traditional assessment tools (Godfrey et al., 1986) and of their communication skills (Kiernan & Reid, 1987) indicated that they fell into this group. While it would be inappropriate to suggest that they did not have cognitive limitations, in the context of their daily lives, they demonstrated much greater understandings of their situations and of their abilities to interpret the world than were
available from earlier assessments. Each of the participants also showed that they were quite adept at using such things as objects or proximity to an object to enhance their message. However, without studying the communication partners, the "props" and the "prosthetics" provided over time by the social context in which communication occurs, the observer cannot possibly hope to record the complexity of communication behaviour that an individual uses or how the environment facilitates that communication. Similarly, if evidence is sought to support the presence of pre-determined communicative intents, we fail to see the complexity with which all of those dynamics, present in an interaction, affect the outcome of that interaction.

In the normal course, people learn the skills of regulating their own behaviour, establishing joint attention and facilitating social interaction in the process of communicating with others (Arthur & Butterfield, 1993). Therefore the behaviour of one communication partner cannot be extracted from any interaction if it is to be hoped that the details of an individual's communicative behaviour can be discussed with any clarity or insight. Whether the partner responds at all to an initiation, how she or he does it, their relationship to the individual in question, their attitude to that person and the degree to which the partner is prepared to engage with the other (Ferguson, 1994), are critical to the determination of the length of any interaction, the strategies used, the complexity of the message and the information conveyed.

**The Communication Partner**

This study has suggested that one of the critical aspects in communication interaction between people with and without severe disabilities is the recognition of the strategies that individuals use and the circumstances under which those strategies are best used. Behavioural research in this area has highlighted the need for people to be engaged with others in order that any understanding about the intent of a behaviour can be determined (Crawford et al., 1992; Kuder & Bryen, 1991) or for any skills development to occur (Cirrin & Rowland, 1985). It would appear that a positive attitude about an individual and their communication abilities is also essential (Bogdan & Taylor, 1992). While there is little doubt about the validity of these statements, the
behaviour of the communication partner is also an essential component of the assessment process. Without a thorough understanding of the role of the social environment in communication interactions, the information that can be gathered about an individual's communication strategies will be, at best, limited.

In completing an assessment of the communicative skills of Dean, Glenn, Helen and Vivienne, one of the aims was to bring about change. A central part of the assessment process was therefore, the identification of those opportunities from which occasions for communication could be created and the circumstances around which communication was most effectively promoted and enhanced. In addition to increasing an understanding of the skills that the disabled participants possessed, this information was critical to ensure that intervention would be successful.

Staff in the vocational centre responded to the communication initiations made by Dean, Glenn, Helen and Vivienne at a lower rate than their residential setting colleagues (4%-14% as against 14%-22%). These simple quantitative measures identified similar differences in the behaviour of Dean, Glenn, Helen and Vivienne across both settings. All of the disabled participants attempted to initiate interaction at higher levels in the vocational setting, as if to try to establish a minimum level of interaction with staff. In contrast, they responded to the initiations of the residential staff at higher levels than they did to their vocational staff. As the study progressed, staff increased the degree to which they responded to Dean in the vocational setting and Helen, Glenn and Vivienne in both settings. Interestingly, the rates at which the four disabled participants responded to those increasing communication opportunities in the residential setting either remained the same or dropped. In the vocational setting, the degree to which the disabled participants responded to the staff's much lower, but increasing, communication initiation rate increased.

These results suggest that an optimum level and quality of communication exists for these people, as it presumably does for everyone. However, the communication partners that Dean, Glenn, Helen and Vivienne had access to, held a great deal of power over them.
To a large degree they determined whether the quantity of communication that each of the disabled participants had and they had a great deal of control over the quality of that interaction. To this end, there were times when the disabled participants attempted to initiate interaction when they received little input from others. At other times, when things were more interesting to them Dean, Glenn, Helen and Vivienne would actively participate. Conversely, when the things happening were of little interest they would withdraw from participation.

The differences in the frequency and content of staff-initiated interactions or responses to their clients are significant in that they show the degree to which communication partners make a difference to the quantity, and inevitably the quality, of communication attempted by individuals with severe disability. If we accept that communication, whatever its form, is a reciprocal activity (Donnellan et al., 1992), in which people with severe disabilities engage in the same ways as other people (Bogdan & Taylor, 1992), then the role of the partner is central to the development of communication skills (Reichle, 1997). Those communication partners without disabilities who in caring for people with severe disabilities, and who value them, hold them in esteem and feel that mutual obligation exists (Newton et al., 1994) between themselves and the people they support are much more likely to engage in reciprocal acts of communication (Grenot-Scheyer, 1994).

The Effect of Staff Attitudes

In addition to the running records and the environmental checklist described previously, interviews were completed prior to staff training with all of the staff involved in this study. The interview data revealed a number of significant differences between the views of residential staff about their clients and their work and those of their vocational setting colleagues. When interviewed, a residential staff member referred to herself as a teacher, a friend, confidante and an advocate. Another 'saw her role as facilitating community integration. However, if people did not wish to be involved in any particular activity, that was their choice. Yet another saw her work as revolving around "the guys". In the vocational setting however the Manager understood that role to
be related to the smooth running of the programme. Another member of staff saw that she had to ensure that her clients achieved their goals. Within the vocational setting, the Individual Programme Plan, was described as being about "the nuts and bolts of people's everyday lives" (Int#1b/4), whereas in the residential setting, Individual Programme Plans were seen as guides that did not control any programme or determine the way in which the house was run.

In the residential setting, the staff regarded it as more important that the four participants had fun and were actually involved in activities than did their vocational counterparts who felt that simply being present was sufficient. In addition, more of the residential staff considered all of the participants as reciprocating individuals who made choices (albeit difficult to interpret) whereas the vocational staff saw their clients as lacking, to a greater or lesser extent, in the skills necessary for choice making. Probably most telling of the differences between the two settings were those staff comments gathered subsequent to the introduction of Vivienne's augmentative strategy. A member of the residential staff reported how the use of Vivienne's strategy was going to make significant changes to the ways in which they did things with Vivienne, whereas a vocational staff member saw that Vivienne would use the strategy simply to "get her own way". The environmental checklist section: "Changes in the Nature of Relationships between Staff and Clients" (Appendix 4) also noted a number of differences between the behaviour of staff in each setting which confirmed the interview data. In general staff initiated interactions in the residential setting were significantly more open ended and positive, they expected responses, they facilitated communication, they recognised their clients' strengths and choices and they recognised the communicative potential in their clients' behaviour.

Clearly, the expectation that an individual will make choices is a significant determinant in the recognition of choice making when it does occur (Reichle et al., 1989). However, what is most significant to this study is that the attitudes that staff held towards their work and the people with whom they worked had an effect on the communication between themselves and their disabled clients (Edgar & Polloway, 1994). An analysis of the attitudes of staff in both settings towards
their disabled clients as documented in the interviews, and the extent of
the communication that took place between staff and the participants in
these settings suggested that attitude is an important determinant in
whether communication occurs or not. At its simplest, those who saw
their role as trainers, or as programme developers and deliverers or
who saw people with severe disabilities as being in need of help, were
less likely to see the communicative initiations or choices made by the
people with whom they worked. By contrast, those staff who were
concerned with assisting in or facilitating an individual’s development,
or in being a friend or confidante responded to more initiations and
interacted more with their clients. In addition, those who did not make
decisions for others, but who suggested options, respected an
individual’s right to relaxation or tried to be a little more personal in
their interactions, were likely to interact more and as a result, were
likely to receive greater feedback from the disabled people with whom
they interacted.

The orientation of the residential staff towards this more personal style
of support and care did not result in significant differences in the types
of communication such as instruction-giving, information-giving, social
closeness or social etiquette, (Beukelman & Mirenda, 1992) that they
had with their clients as compared to their vocational setting colleagues.
By and large, interactions were of an instruction giving nature in both
settings, although marginally lower in the residential setting. While
there was an increase in purely social interactions over the course of the
study, this same trend was evident in the vocational setting. Interestingly, staff in the residential setting were also less verbally
encouraging (Kuder & Bryen, 1991) in the content of their interactions.

These results show that there were numbers of similarities between the
more overt behaviours of staff in the residential and the vocational
settings. However, there were significant differences in the attitudes of
staff to their work and to their clients that provoked differences in both
the quality and quantity of communication between staff and clients. In
the residential setting, despite high levels of instruction giving, staff
were happy to make suggestions, for Glenn and Vivienne particularly
and Dean and Helen to a lesser extent, and then to leave the final
decision about what they wanted to do, and when, to them. As opposed
to situations in which people were offered a choice from a limited range, the residential staff's behaviour facilitated a greater degree of self determination (Wehmeyer & Metzler, 1995). In addition, they were more accepting of the communication styles and strategies used by Dean, Glenn, Helen and Vivienne. Not only were these results apparent from the running records which detailed numbers of incidences of staff behaviour in both settings over the 10 months of the study, they were confirmed in the sustained changes recorded by the coded observation categories and they were reflected in the things that staff said in their interviews. It is argued that the residential staff behaviour in particular, resulted in increased communication which in turn facilitated its development (Guralnick, 1997; Ogletree et al., 1992; Realon et al., 1990; Siperstein, 1992) between staff and clients.

Interviews with staff also identified differences in the opportunities that existed for choice making between the two settings. Staff in the residential setting saw it as their role to suggest options and to create opportunities in which Dean, Glenn, Helen and Vivienne could learn about the choices available. They did not see that it was their role to push anybody to make a choice or to determine what those choices might be. In the vocational setting, the Individual Programme Plan determined what happened on a daily basis and as a result, restricted the choices available. This approach to their work inevitably resulted in a focus in the vocational setting on the development of daily living skills (Greasley, 1995; Parsons et al., 1993) at the expense of relationships or the making of significant choices (Aveno, 1987; Lovett, 1996; Stancliffe & Abery, 1997). The interviews did show that the residential staff were also concerned with skills development, but not at the expense of a personally oriented home environment. In this respect, the development of daily living skills was encouraged within the context of the relationships existing between people and in the routine of the normal day.

The differences between the settings are important given the differences in the purposes and the monitoring of each setting. If for instance the vocational setting was required to report on the number of goals achieved and received its licence and funding on that basis, Individual Programme Plan goals and their achievement must
inevitably drive the programme offered. Conversely, the accreditation of the residential setting hinged on the successful evaluation of the provision of quality services. The degree to which these bureaucratic requirements affected the potential for quality communication between people to occur is cause for further inquiry.

**Relationships Between People as a Context for Communication**

The effects of the behaviour of communication partners on the communication of Dean, Glenn, Helen and Vivienne were significant. Although the number of people in this study was small it is possible to draw some general conclusions about the effect that staff behaviour and individual interactions had on the communication skills that each of these individuals could demonstrate. People who have severe disabilities are frequently isolated in the community and lead lives that are prescribed for them (Benz & McAllister, 1990; Kennedy et al., 1989; LaConto & Dodder, 1997; Wright & Ashman, 1991). The role of staff therefore is essential in providing something of a bridge between the opportunities for interaction and the relationships that develop amongst the typical members of the community and the overly regimented lives of people with severe disabilities who live in community settings (Fine et al., 1990; Kuder & Bryen, 1991).

Although somewhat artificial, in that the relationships between staff and clients in the residential setting were paid ones, it would appear that communication was facilitated to a greater degree between the staff and Dean, Glenn, Helen and Vivienne as they were regarded as reciprocating participants who had rights, who all made choices and who were all recognised as human, albeit with severe intellectual disabilities. While a number of similarities did exist between the vocational and residential settings, there were a number of differences. In the vocational setting perceived cognitive limitations were seen as limiting the abilities of people to interact with the world. Consequently, people were more likely to be coerced into activities if they did not readily agree to participate and there seemed to be a determination to do what was best, or "for their benefit" (Int#6b/2). While a small number of staff in the residential setting agreed with these sentiments, this stance was not the norm. Clearly the perceptions held by the vocational staff
that Dean, Glenn, Helen and Vivienne were limited in ability resulted in a lack of opportunity for choice making particularly (Kishi et al., 1988), (Malouf & Schiller, 1995; Parsons et al., 1993; Reichle et al., 1989; Stancliffe & Abery, 1997) and communication generally. It has been shown that, given the opportunity, all of the disabled participants did interact with others and did make choices. However, difficulties arose when the perceptions of potential communication partners limited the degree to which those partners were prepared for, or responded to, the communication initiations of the disabled participants.

In addition to studying those interactions that were successful, there is also value in looking at those which did not create a communication interaction. As has been noted, there were numbers of occasions of staff initiated interactions that prompted either no response, or disinterest. When Dean was asked to "help me sing" (obs#15), he turned away. When Glenn was shown pictures in a book for more than eight minutes (obs#32) his lack of interest in the activity was obvious, and when Vivienne was offered the xylophone (a child's toy) (obs#14) she turned away from Denise. It could be argued that the circumstances of these examples actually mitigated against communication occurring (Halle et al., 1984); Haring et al., 1987; Peck, 1985). In indicating their choices about the activities on offer, the disabled participants were clearly not interested in being involved.

If communication in individuals with severe disabilities is to be fostered, then a significant goal must be, to increase those people's interest in the environment as an occasion for communication (Ostrosky & Kaiser, 1991). Clearly this can only be achieved if the severely disabled individual in question is involved in the selection of activities. In this respect, the vocational staff often did not establish interactions that were cooperative in nature, nor were they interactive in that they failed to establish joint patterns of awareness and interest (Rogoff, 1990). If the role of the communication partner had been ignored in these instances, it would have to have been assumed that the low levels of interaction taking place were as a result of the inability of the disabled participants to participate in such interaction. This study has clearly demonstrated however, that the communication partner is central to the development of any interaction. Therefore, they are
critical to our understanding of the communication skills of people experiencing severe disabilities.

A major implication of this study is that staff need to see that as well as responding to the initiations of others, and creating multiple opportunities in which communication can occur, the quality of interaction is critical to the communication process. In this respect, making opportunities available, creating an interest in the environment and using these situations as occasions for social interaction, rather than emphasising the completion of activities, is central to the communication process. It seems that much of what happens in residential and vocational settings is geared towards indicating choice between limited options, the development of daily living skills and increasing independence. However, the people whose communication skills have been studied are not necessarily interested in the acquisition of these things. What these people seem to want is the chance to make some real decisions about the things that affect them and primarily, to have some meaningful relationships. What they seem to be prepared to settle for, in the interim anyway, is the chance of a good chat!

The Communicator

People with severe disabilities will all bring their intrinsic skills and difficulties to the communication process. As has been seen in this study, Helen enjoyed craft type activities, Dean enjoyed the company of others at a distance and Vivienne was very fearful of interactions with people she did not know. Clearly, these sorts of skills and difficulties will make a difference to the sorts of strategies that they use, or could be assisted to use, and the conditions under which they could be used. Of particular concern however, for all of these people were issues around the spontaneity with which they could use specific communication strategies, the form that that communication could or should take and the frequency with which they were in a position to use their communication skills to interact with others.

Spontaneity of communication is central to the expression of preferences, the making of decisions and the opportunity to interact with others on a social level. The skills or difficulties of an individual
which arise from their disabilities will affect the form an individual's communication strategies take, which in turn will affect the degree to which others identify communication opportunities when they are presented. In this instance, frequency relates to the context in which communication takes place and how the assistance and support that people require as a result of their impairments affects the level at which they can establish and respond to interactions with others.

**Spontaneity in communication.**

The collection of detailed observations over time culminated in the development of communication profiles that described the skills and difficulties that Dean, Glenn, Helen and Vivienne brought to their communication interactions. These profiles were then used to identify strategies that would augment those skills and go some way to overcoming the difficulties they experienced. As a result of the length of the period of observations (10 months), the variety of contexts in which they were taken and the numbers of people interacting with the disabled participants, intent was able to be inferred from some of their actions. Contrary to most assessment strategies (e.g. Carr et al., 1994; Crawford et al., 1992) though, the determination of the intent of an individual's behaviour was not a central focus of the assessment process. What has been critical to this study has been an analysis of the particular strategies and skills that individuals used that could have fulfilled their communication needs (Lucas et al., 1993) as well as the identification of the difficulties that affected that communication.

People with severe disabilities, particularly those who have had institutional experiences, have frequently been described as passive in their behaviour (Reichle et al., 1989). Such people have also been commonly recognised as having significant motor disorders that restrict, among other things, range of movement, dexterity, tone and power (Rogers, 1992). As a consequence of these issues, the communication behaviours used by people with severe disabilities are likely to be subtle (Peck, 1985) and may be restricted to a narrow range of behaviours. It is important to note however, that whatever the behaviours are that individuals use to try to establish interactions, they
are accommodations to the difficulties they experience and are therefore critical to an understanding of the people using them.

In order to be functional, communication must influence the behaviour of others and bring about effects that are appropriate and natural in any given context (Rowland & Schweigert, 1993). To this end, any strategy must be capable of being used spontaneously (Halle, 1987), that is, without prompting from another. Over the 10 months of the study, the disabled participants attempted to initiate interactions using the eye contact, facial expressions, gestures, and proximity that they had always used. These and other initiation strategies that could have resulted in communicative interactions did not often have that effect. Nonetheless, they were spontaneous. Spontaneity in communication and its initiation could therefore be argued to be one and the same thing. People with severe disabilities do use idiosyncratic behaviours to create opportunities for interaction. The fact that a communication partner has not responded to those opportunities cannot be considered to mean that a communicator is incapable of acting without prompts or in a spontaneous fashion.

The strategies that Dean, Glenn, Helen and Vivienne used did not result in functional communication because they failed to influence others, or lead to appropriate and natural consequences. The fault however, was not in the independent use of a communication strategy, but in the lack of recognition on the part of a potential communication partner that an occasion for communication had arisen. People with severe disabilities all communicate using a range of behavioural strategies. Those strategies are also adaptations to the difficulties they experience as a result of their impairments. They are therefore central to the development of any new communication skills. Clearly, if people already use a range of behaviours to try to secure an interaction with another, it would seem reasonable that they should continue to use those behaviours, especially where they are successful adaptations to the difficulties they experience as a result of their impairments. To this end, functional communication results from an awareness on the part of the communication partner that specific acts or behaviours do convey meaning and as such, should be responded to.
The form of communication.

Dean, Glenn, Helen and Vivienne all used a wide range of behaviours in the presence of others that could have conveyed information and which could also have initiated communication. Over time, patterns in their behaviour emerged. They all attempted to make eye contact with potential communication partners. Glenn and Vivienne frequently used objects to supplement their attempts at eye contact and they all used vocalisations at various times. Helen and Glenn also used behaviours described as stereotypic. It became apparent however, that each of the disabled participants also experienced a number of difficulties that precluded their communications being any more obvious than they were. Helen was very easily distracted and seemed to make little use of her hands. Likewise, Dean was obviously uncomfortable with physical contact, especially around the hands and face and like Helen, made little use of his hands. Although very capable in many ways, Vivienne's motor skills meant that she was imprecise in her fine movements and Glenn appeared to lack dexterity in any activity with which he was unfamiliar. At other times however, he was extraordinarily precise in both his manipulation of objects and in the recognition of the patterns making up things like jigsaws. Within the constraints of their impairments however, all of these people had adapted their behaviours in order that they could interact and communicate with others.

Understanding the form of Dean, Glenn, Helen and Vivienne's communicative behaviour was critical to the understanding and extension of their communication skills. This is not to suggest that the assessment process ought to be guided by an investigation of the degree to which each person's skills deviate from typical communicative behaviour. Nor is it a suggestion that the identification of difficulties should form the sole basis of an assessment. The form that an individual's communication behaviour takes must be affected however, and will continue to be affected by the difficulties that the individual experiences because of their impairment (Gleason, 1993; Goode, 1994). Recognition of that must therefore drive the selection of augmentative strategies with which to supplement existing skills.
As well as the difficulties an impairment creates, the form that a behaviour takes is affected by the context in which it occurs. The participation of another in an interaction and the stimulation the environment provides will all affect the skills an individual is able to use at any time. People with severe disabilities have been shown to use skills in some settings but not in others due to presence or absence of specific supports (Gleason, 1993). It is important that these discrepancies and ambiguities in individuals' behaviours are understood. This will then contribute to an understanding of the skills that a person has and the optimum conditions under which they can be used.

The literature (eg. Carr et al., 1994; Crawford et al., 1992; Donnellan et al., 1984) has reported that an understanding of the context in which communicative behaviours occur is essential to an understanding of the intent behind that behaviour. To ensure that intent could be inferred, it has been necessary to ensure that individuals were engaged in activities with others (Crawford et al., 1992). It has already been argued however, that what people do when trying to engage with others is just as important to the understanding of the communication skills that individuals have, as are the things they do with communication partners. The people in this study tended to use similar patterns of behaviour in similar situations. When it was particularly noisy, Glenn tended to put his fingers in his ears, flick his fingers over his face and a short time later, rock side to side on his feet and slap his buttocks. Helen often began to slap herself when left to herself or if she thought she was going to be left behind. Similarly, Dean would groan quite loudly if he did not get the attention he desired. Over time, the form that these individuals' behaviours took, whether engaged with others or not, gave the observer clues as to the messages they were trying to convey (Bogdan & Taylor, 1992). Clearly, the communication environment in which an individual attempts to participate will have a significant effect on the form that a communicative behaviour takes. When observed over time, the form of a particular behaviour, in combination with the environment in which it occurs, will affect the degree to which behaviour can be understood as meaningful.
There has been a suggestion that frequency of communication is likely to result in the development of more sophisticated signals (Cirrin & Rowland, 1985; Ogletree et al., 1992). Over the five months subsequent to the staff training that brought about a change in the communication opportunities available to the participants, some small changes did occur in respect of the communication skills demonstrated by the participants. Dean began to go and stand beside the people he wished to communicate with and would blink and look away to indicate agreement or otherwise. Vivienne began to take her communication book to other people when she wished to communicate and Glenn, on a few occasions, took his alphabet board to those with whom he wanted to interact. In addition to these new strategies however, all of the participants continued to use the strategies they had always used and they all required support to use the augmentative strategies designed for them. While there were numbers of small changes in the communicative behaviour of the participants, the difficulties that each of them experienced in terms of movement, maintaining attention to a listener, tone, and tolerance to proximity, noise and touch, precluded the rapid development of more easily understood and independent communication strategies.

The form that an individual's communicative behaviour takes will be affected by the environment in which it occurs and the difficulties that an individual experiences as a result of their impairment. Such difficulties may preclude the rapid development of more sophisticated (more easily recognised!) communication interaction strategies.

**Frequency of communication.**

Over the 10 months of the study Dean, Glenn, Helen and Vivienne all initiated communication and responded to the communication of others at very different rates. In addition, they communicated with others in different settings at different rates. By the end of the study, Vivienne initiated interactions with staff in the residential setting at an average rate of 2.25 times per 10 minute observation and responded to that staff's initiations 74% of the time. However, she initiated interactions at an average rate of 3.64 times per 10 minute observation in the vocational setting, and responded to staff initiations 89.4% of the time.
A similar pattern existed for Helen and Dean. Conversely, Glenn's responses were higher in the residential setting than in the vocational setting.

The rate at which each of the participants initiated and responded to communication varied a great deal across the three phases of the study also. Dean increased the degree to which he initiated communication as the residential staff decreased the rate at which they initiated interactions with him, yet the percentage rate to which he responded to them fell also. Glenn's communication initiations in the residential setting, already the lowest of his peers, remained unchanged as did his responses to the initiations of others. In contrast, both Helen's and Vivienne's rate of initiation and response to communication initiations by staff fell slightly in the residential setting and remained relatively stable in the vocational setting.

Clearly these people, all unique individuals, had specific needs and thoughts on which they acted (Ferguson, 1994, Gleason, 1993). However, as staff became more familiar with the idiosyncratic communication strategies each person used, and as there was more assistance and a greater number of activities available to each person, the communicative initiations made by the disabled participants tended to decrease. The differences in the degree to which people initiated and responded to communication were not great. In addition, the periods of observation between interventions were relatively short by comparison with the length of time each individual had been in the communication environments analysed in the first phase of the study. These points notwithstanding, some comment on these trends is warranted.

The percentage rate to which individuals responded to the increasing initiations of staff did fall in some cases in the residential setting. However, the average number of times which the disabled participants responded to the initiations of others in each ten minute observation did not change greatly. This change, apparent in the residential setting, was not recorded in the vocational setting. However, the rate at which vocational staff initiated and responded to Dean, Glenn, Helen and Vivienne's communication was much lower than that of the staff in the residential setting. As previously noted, there would appear to be an
optimum level at which the communication interactions available to people can meet their communication needs. Significant in this issue is the degree to which a non response was in fact, a legitimate response to the initiation made by another. Presumably, when people feel that they do have sufficient interactions with others, they can pick and choose between when they wish interactions and which interactions will best meet their needs. Conversely, where there is insufficient opportunity, individuals will try to increase the interactions available by either maintaining interactions or creating new ones. Where the interactions available to people meet their needs, a balance is struck, as was perhaps the case in the vocational setting towards the end of the study.

We know that when people with communication difficulties use communicative behaviours within the context of routines and activities it is much easier for others to ascribe meaning to those behaviours (Crawford et al., 1992). We also know that a wide range of activities can provide opportunities for communication to occur (Rowland & Schweigert, 1993). As discussed, people with severe disabilities frequently require high levels of assistance to complete many tasks and activities. To a greater or lesser degree, this was certainly the case for the participants in this study. In addition, the sort of assistance required by Dean, Helen and Vivienne particularly, meant that routines within activities had to follow a relatively set pattern. Each step in these routines was sequential in order and each player had a role to complete that supported the actions of the other (Goode, 1994). When eating in the residential setting for instance, Helen needed assistance to load her spoon and some verbal encouragement to lift it to her mouth. It was shown in the results section that as more activities and a greater level of support became available to the participants, the staff increased the degree to which they responded to, and initiated, interaction with the participants. In order to do this, they must also have become more familiar with the communicative behaviours that the disabled participants used, as well as the needs that they had. This being the case, it is entirely possible that the staff began to anticipate the potential for problems or the need for assistance, and to provide the support that Dean, Glenn, Helen and Vivienne had previously had to try to secure for themselves.
Although no firm conclusions are possible, the frequency with which people with severe disabilities attempt to establish communicative interactions is affected by the context within which they live and work. The degree to which the communication partner is receptive to communication opportunities as they arise is central to the success of communication between people. Similarly, the anticipation of the need for support and assistance could reduce the opportunities available for individuals with communication difficulties to request assistance, to comment on issues, or to make choices. This could lead to a reduction in opportunities for people with severe disabilities to initiate communication and may be detrimental to the development of communication between people with and without disabilities.

**Communication Intervention**

Typically, communication training has been based on the belief that without intervention people with severe disabilities will not have the means to communicate (Baumgart et al., 1990). Consequently, training has focused on the development of communicative behaviours in which people with severe disabilities were taught to respond to requests (Houghton et al., 1987), use requesting behaviours themselves (Chadsey-Rusch & Gonzalez, 1988; Reichle & Sigafoos, 1991; Tirapelle & Cipani, 1992), or indicate choices (Realon et al., 1990). The justification for this focus has been that if people were able to obtain objects or activities then most of their communication needs would be met. However, few of the skills that people have typically been introduced to have generalised to other settings (Halle, 1987).

A preceding section has discussed the role of the communication partner in the assessment of the communication strategies of individuals with severe disabilities. Central to that discussion was the recognition that without a receptive and supportive partner, people with severe disabilities were unlikely to demonstrate those communication skills that they possessed. Consequently, the actions of communication partners and the context in which people attempted to establish communication were seen to be as central to the assessment process as were the skills used by individuals with severe disabilities in initiating
and participating in communication interactions. The same is true of communication intervention. If communication intervention occurs in clinical settings, as it generally has, and if it focuses on indicating preferences, making requests and other instrumental aspects of communication, then the opportunity to develop relationships, to share social interaction or to make decisions or exercise real choices, cannot occur (Browder & Martin, 1986; Markova et al., 1992; Zilber et al., 1994). Communication skills therefore cannot develop.

Simply assuming that if communication intervention takes place in a natural context an improved result can be expected, is not however the complete answer (Hayden et al, 1992; Hundert & Houghton, 1992). In respect of people with severe disabilities, the literature has reported that frequency of communication and sophistication of communication strategies are inextricably intertwined (Ogletree et al., 1992). However, it could be argued that the opportunities created by people with more sophisticated communication strategies (i.e., strategies that are more easily recognisable) result in greater numbers of interactions. Generally community resettlement of people with severe disabilities has been characterised by high rates of instruction giving and little actual interaction (Fine et al., 1990; Kuder & Bryen, 1991). In the baseline phase of this study, Dean, Glenn, Helen and Vivienne received responses to their communication initiations in the range of 4%-22% of the time, were not engaged in any activity, excluding food, for 40%-70% of their days and received the bulk of their interaction as instructions. We also know that these people attempted to interact with others frequently and that they demonstrated skills and understandings of which their staff were ignorant.

With regard to communication intervention then, the task is two-fold. It is often assumed that people with severe disabilities do not communicate, or do not use sophisticated strategies until they are trained to do so. Consequently, their communication initiations are overlooked. In addition, they have available to them, few activities about and within which opportunities for communication can arise. Therefore, those who live and work with people with severe disabilities need to become aware of their communication strategies and create social, physical and emotional environments that will enable them to
recognise initiations when they occur and to engage in equitable interactions. Second, opportunities must be made available for people with severe disabilities to secure and develop positive social relationships within which multiple opportunities for communication can be provided and in which the acquisition, augmentation and generalisation of communication skills (Kaiser, Ostrosky, & Alpert, 1993) can be promoted.

Intervention and Communication Partners

At the beginning of the study, it was expected that there would be few differences between the communication opportunities available in the vocational and residential settings. The differences that did become apparent, became so largely as a result of the collection of the coded observations. The running records collected the detailed contextual data that enabled the development of an understanding about the communication of Dean, Glenn, Helen and Vivienne. The coded categories of behaviour extracted from those records made it possible to see, and to measure the size of the differences between settings in the amount of communication available to the disabled participants. While the qualitative observation tools in the study have provided a way to understand communication, without some form of quantitative measurement, the differences in the availability of communication between settings would not have been apparent.

Prior to staff training there were few differences between settings in the degree to which staff initiated communication themselves, "encouraged" (Kuder & Bryen, 1991) their clients to communicate, gave instructions or provided activities in which clients could engage. Similarly, the results in the environmental checklist section: "Changes in the Nature of Relationships between Staff and Clients" (Appendix 4) did not identify any clear differences between the two settings regarding the degree to which staff facilitated and participated in interactions with their clients. However, quantitative data extracted from the running records noted that there were differences in the degree to which staff responded to the initiations of clients (4%-14% in the vocational setting and 14%-22% in the residential setting) and the
degree to which their clients responded to the initiations of staff (76%-81% in the vocational setting and 87%-96% in the residential setting).

During the staff training sessions, all of the staff identified a number of strategies that they could use to try to create some change in their respective environments. Most importantly, staff saw that they had to work on developing the relationships that they had with each of the individuals in the study and also to enrich the environment as a context in which communication could take place. The vocational staff later responded to these suggestions by instituting a one-to-one time with each of the disabled participants at various times during the week. While this sort of accommodation would be unlikely to be considered useful in facilitating a positive communication environment, some changes in staff beliefs about their clients as a result of this were reported in the group interviews. Vivienne was soon perceived as somebody who sought interaction, who had some concept of time, and who remembered those times and events from one day to the next. Dean was seen as someone who had a sense of humour and who enjoyed a bit of teasing. Ironically, Glenn who was not seen by staff to enjoy one-to-one attention to the same degree as his peers, was soon regarded as demanding and non-compliant.

**Staff priorities and communication**

Interviews with staff in the vocational setting indicated that staff focused on their programme and on achieving the Individual Programme Plan goals that their clients had, as they were required to by their funding agency. It was seen as a management responsibility to "develop the programme... keep notes and develop individual plans for people" (int#1b/3). This meant that the orientation in that setting was directed much more towards teaching skills than the development of social relationships (Newton et al., 1995). In a general sense, this must result in a focus on training that is relatively tightly structured (Oetting & Rice, 1991) and which requires the learner to acquire those skills deemed appropriate and acceptable (Siperstein & Leffert, 1997). Under these circumstances, communicative interactions with others must be focussed on training people to use new skills. Consequently, knowledge about and recognition of, the idiosyncratic strategies that people already
use will not be necessary to the extent that it is if an understanding about an individual's extant communication is desired.

In the residential setting, staff were concerned with their relationships with each of the participants and with "making a difference" (int#6a1) to "the guys' " (int4a/1) lives. The Manager saw it as her responsibility to set the tone of the residence. To this end she was "a friend and a confidante and an advocate to the residents" (int#3a/10). Feedback from the residential setting indicated that they did not introduce any new programme initiatives into that setting. Instead, staff spent time in their regular staff meetings familiarising themselves with the communication profiles they had received at staff training. Rather than adopt new ways of working, staff wanted to become much more aware of the sorts of strategies and skills that the residents used. To this end, it was suggested that the drop in response to Dean's communication initiations (arguably the most subtle of all of the participants) occurred as staff took some time to stand back and observe. Although not as obvious as in Dean's case, the change in the responses of the residential staff to their initiations of their clients was slower than that of their vocational colleagues. As was demonstrated in the coded observation results though, residential staff sustained and built on the changes recorded by the coded observations to a greater extent than the vocational staff.

In the course of their work subsequent to staff training, the vocational staff re-evaluated some of their beliefs about the four disabled participants in this study. As was reported in the group interview, they saw that each individual showed greater comprehension of their world than they had previously thought. This understanding undoubtedly resulted from the opportunities available to individual staff members to closely observe their clients' behaviour in specific contexts (LaConto & Dodder, 1997; Wright & Ashman, 1991). However, the opportunity for Dean, Glenn, Helen and Vivienne to make choices remained limited to those that were deemed appropriate. When Glenn's choices were not acceptable to the staff, their support for him was withdrawn and his behaviour was interpreted as demanding. In this respect, the nature of Glenn's choices seemed to restrict the support available to him rather than support being determined on the basis of what his actual needs
were (Legault, 1992). Central to this discussion were the continuing difficulties that the vocational staff had in recognising the communicative potential in their clients' behaviour. This was particularly noticeable with regard to Dean and Helen who were considered the most disabled of the four. It would seem that the vocational staff, (or at least, those staff responsible for the "programme") remained of the opinion that Dean, Glenn, Helen and Vivienne, because of their severe disabilities, would be likely to behave in "abnormal" (Wagner, 1991) ways and communicate very little, even with the use of their behaviour (Henry et al., 1996). Consequently this traditional approach to communication intervention focused on the remediation of the perceived deficits of the four disabled participants and on the need for staff to support their communication development (Guess et al., 1993).

Equally important in the discussion of communication intervention was the use, in the vocational setting, of one-to-one instruction and interaction as a way of responding to the communication difficulties experienced by Dean, Glenn, Helen and Vivienne. Each session involved the preparation of activities for the disabled participants during which interaction between the staff member and the individual in question was fostered. While this made a difference to the relationships between some staff and clients, it did not encourage a general change in the orientation of the staff towards an understanding of those strategies used by Dean, Glenn, Helen and Vivienne. Consequently, staff responses to the communication opportunities created by Dean, Glenn, Helen and Vivienne remained low by comparison with the responses of the residential staff.

In the residential setting, staff recognised the degree to which their own behaviour could affect the communication they had with Dean, Glenn, Helen and Vivienne and this became the focus of their attention. In virtually all of the measures taken to indicate the frequency and the various qualities of interaction occurring, the residential staff outperformed their vocational colleagues and sustained the changes that they made.
**Professional training of staff**

It has been reported that professionally trained staff are likely to be more liberal in their attitudes to people with severe disabilities (Murray & Minnes, 1994). This was not found to be the case in the present study. More of the staff in the vocational settings had professional qualifications that could be said to be related to the field in which they worked than did their residential colleagues. However, the "programme" in the vocational setting was a great deal more prescriptive than that in the residential setting and determined a great deal more of what happened. In the vocational setting, the Manager took on the role of overseer and programme developer. The rest of the staff focused on the achievement of goals that had been set. Such a focus may have been based on the belief that individuals with severe disabilities need direction in order to develop (Rees et al., 1991).

The residential staff also developed goals for their clients but these goals did not drive the programme. If Dean, Glenn, Helen or Vivienne did not wish to be involved in an activity at any time, their wishes were respected. From the manager down, the staff in the residential setting were concerned to do their best for "the guys" but only as and when "the guys" were happy for that to happen. This very human focus as opposed to the training based orientation of the vocational staff, and the positive attitudes that the residential staff held about their relationships with Dean, Glenn, Helen and Vivienne may have meant that the residential staff saw more of what the residents did, were more responsive in their own actions and ultimately empowered their clients to a greater extent.

The previous points notwithstanding, the vocational setting relied on the identification and achievement of individual goals for its on-going licensing and funding. Consequently, while staff may have wished to be more pro-active in the development of relationships, there were fewer opportunities to do so than were possible in the residential setting. If this is so, the environment in which people work with individuals with severe disabilities and the restrictions placed on them in terms of the work they do, could affect the opportunities available to communication.
partners as much as it does the opportunities of people with communication difficulties.

We know that the environment can restrict the access that people have to communication opportunities (Kaiser et al., 1993) and that the absence of certain types of interaction can effectively limit communication development (Halle, 1987; Haring et al., 1987; Kishi et al., 1988; Peck, 1985). We have also recently seen that partner knowledge about an individual's communication strategy will affect the quality of their interactions with that person (Hunt et al., 1996). However, what the literature has yet to address is the importance of communication partner insight into how their own attitudes, behaviour and skills fundamentally affect the communication process. If we accept that augmentative communication strategies are best integrated into an individual's communicative repertoire when they supplement, rather than replace, existing skills (Romski et al., 1994), then the communication partner must be absolutely familiar with those skills prior to the introduction of any supplementary strategies. In addition, they must recognise the abilities and rights of people, even those with severe disabilities, to make decisions and choices, to exercise preferences, to communicate those preferences and to self-determine (Wehmeyer & Metzler, 1995).

Despite the use of a variety of strategies by Dean, Glenn, Helen and Vivienne, they all experienced some difficulties in initiating communication with others. Even when they had all been introduced to augmentative strategies, the primary mode of communication between staff and the four participants utilised those strategies that Dean, Glenn, Helen and Vivienne had always used. In that environment in which staff had focused their attention on learning about the communication strategies that their clients used, significant and sustainable changes took place. Conversely, where it was seen that staff were the ones who were responsible for shaping and extending communication within a range of prescribed and specific activities, those changes that did occur were modest and unsustained. Clearly, to develop communication people need to be able to interact in natural settings that facilitate interaction (McEvoy et al., 1990). To ensure that this can happen, the communication partner must have an in-depth knowledge of all of those
strategies used by an individual with a communication difficulty, they must be aware of the circumstances under which communication is facilitated and they must be aware of the effect of their own behaviour on the communication process. Therefore, where intervention occurs, it must be directed towards potential communication partners in the first instance, rather than being focused on those experiencing communication difficulties.

**Intervention and Environmental Adaptation**

When individuals with disabilities are left unsupervised, the absence of staff means that opportunities for decision making are generally much greater than during periods of supervision (Stancliffe, 1991). However, people with severe disabilities have high level needs for support and assistance for most daily activities. Consequently they do not have the opportunity to spend a great deal of time without supervision. Despite evidence suggesting that severe disability does not necessarily equate with an inability to understand the world (LaConto & Dodder, 1997; Wright & Ashman, 1991), individuals' needs for support have often been taken to mean that an individual with a severe disability will be incapable of any independent thought or action at all (Parsons et al., 1993; Siperstein et al., 1990), unless they are taught these skills (Danforth, 1997). If the staff who support individuals with severe disabilities believe that they require constant and on-going support to progress, little will be expected of them and few opportunities will be made available (Kishi et al., 1988; Malouf & Schiller, 1995; Parsons et al., 1993).

Communication skills cannot effectively develop in the absence of social interaction (Rogoff, 1990). An individual can be taught the more mechanical aspects of communication such as responding to a request, requesting items or expressing a choice but the social communicative strategies an individual needs to interact with another can only be learned by being an active participant in a communication dyad (Hwang & Hughes, 1995; Roberts et al., 1994). People who have severe disabilities typically lead restricted lives (Polloway et al., 1996). Even when they live in community settings they are frequently grouped with
others who have similar needs. Inevitably this leads to restrictions on the developmental opportunities available to them (Wilson, 1997). While such living and working arrangements may be less than satisfactory and contrary to the concept of inclusion (Falvey, 1986), they are still the reality of the lives of many people with severe disabilities. In the absence of typical learning opportunities therefore, it falls on the staff who work with and support these people to facilitate opportunities in which communication development can occur. To this end, the environment in which people live and work must be such that people are stimulated to engage in activities, to interact with others and to have some control over the things that happen to them (Kennedy et al., 1990). In addition, if support staff for individuals with severe disabilities are unsure of the potential for their clients to make decisions and then to communicate them, they also need a context where they feel confident to let clients both take risks and communicate their decisions.

In this study it has been shown that the communication partners made a significant difference not only to the quantity but also the quality of the interactions that took place between them and Dean, Glenn, Helen and Vivienne. It has also been shown that staff initiated and participated in interactions more within the context of activities than in the normal course of the day. The results from the environmental checklist section: "Activities" (Appendix 4) showed that when activities were available, staff were inclined to converse with their clients, to offer choices, albeit limited, to offer support and to attempt to capture the interests of their clients more than they were during unstructured sessions.

As has been the case in the rest of this study, although activity levels between the settings were very similar, some differences did exist in respect of the engagement of individuals in activities. In the vocational setting, being present at activity sessions was considered sufficient, particularly for Dean and Helen, whereas in the residential setting, participation was expected. This very much mirrored the perceptions of staff in the vocational setting that the disabled participants were unlikely to gain a great deal from participation in activities. Inevitably
the communication gains made were affected by these beliefs (Lord & Pedlar, 1991; Markova et al., 1992).

The previous comments notwithstanding, inclusion in activities in either active or passive ways did appear to assist the communication process. The benefits of passive inclusion were modestly though. When engaged in activity, Dean, Glenn, Helen and Vivienne had a greater number of interactions with others. Whatever the specific qualities of these interactions, the fact of their existence must have positively affected communication (Hile & Walbran, 1991; Houghton et al., 1987; Ostrosky & Kaiser, 1991; Peck, 1985) in those settings. While some of this gain was no doubt a result of proximity, having topics for conversation arising from activities seemed to make it easier for staff to initiate interactions. In addition to activity related communication interactions that occurred, there were a number of occasions when quite long social exchanges took place that were not necessarily related at all to the activity at hand.

In the vocational setting particularly, it has been shown that others' perceptions about the ability of individuals to participate in activities, and to converse about those activities, affected the level to which individuals were included. Although all staff increased the degree to which they initiated interactions, their gains in responding to the initiations of their clients were much more modest in the vocational setting. Although Helen was included in many activities, her communication initiations largely remained ignored. In the residential setting, staff responded at relatively high levels to the initiations of Glenn and Vivienne. However, in the vocational setting, as Glenn was perceived to be increasingly demanding and as Vivienne was seen to be more independent in her activities, the responses they received remained modest.

Clearly, the context is important for communication to occur and the greater the range of experiences available, the greater the likelihood that communication will take place (Kennedy et al., 1989). In this study the activities that were available to people did provide material about which to communicate, especially when individuals got to choose the type of activity, the degree to which they wished to participate and the
role that they preferred. How purposeful the activity was, how meaningful it was to an individual's circumstances and the rewards that were available all determined the likelihood of participation by each individual. In addition, a physical environment that was not too noisy or too crowded assisted people to remain involved. However, the communication partner remained the most critical factor as to whether communication occurred, how successful it was and how much it could assist in the development of more sophisticated communication skills and strategies. Without positive relationships, real gains in communication skills will not occur (Sands & Kozleski, 1994). Similarly, while the use of "encouraging" language (Kuder & Bryen, 1991), or a receptive and stimulating environment (Rowland & Schweigert, 1993) is also important, they are not sufficient without reciprocal, positive and supportive relationships.

Summary

All behaviour communicates and anything that an individual does in the presence of a communication partner has information value, whether the individual using the behaviour intends that. Individuals develop communication skills as a result of their interactions with others in social settings. As a consequence, communication assessment must take place with reference to the supports that are available to people in their social and physical environments. It is only by reference to these supports that the skills and strategies and needs of individuals with communication difficulties can be understood. The data collected in this study showed that Dean, Glenn, Helen and Vivienne used a wide range of strategies to have some needs met. They were also shown to have greater understanding of their situation than previously thought, but their communication was restricted by difficulties related to their impairments and by the fact that the majority of the communication opportunities they created went unnoticed and received no staff response.

The assessment of the communication of people with severe disabilities has traditionally been understood from an analysis of the intent of an individual's communication as inferred from the setting events and consequences surrounding that behaviour. The research has argued
that intent can only be understood when individuals are engaged in activities with others. However, the people with severe disabilities in this study spent large periods of time not engaged in activity, and as already noted, most of the communication opportunities they created were ignored. Therefore and according to the literature, their behaviours would have had to be interpreted as sensory in nature and the individuals themselves described as uncommunicative. To understand the reality of people's communication skills and needs, it has been shown that it is essential that individuals with severe disabilities are recognised as people whose lives and behaviours are affected by the things that have happened to them and that are happening around them. Clearly therefore, an understanding of the form of an individual's communication and the social and physical context in which it occurs is central to an understanding of the communication process. Setting events and consequences cannot account for how the behaviour of others does or does not support communication, nor will they assist in the description of the skills and strategies individuals bring to their communication.

With regard to assessment, it is clear that it is impossible to extract an individual and their behaviour from any setting and then hope to discuss that individual's communication with any clarity or insight. The form that a person's communication takes will be affected by the context in which it occurs. The interaction of form and context help us to understand an individual's potential for developing their communication and the difficulties which they experience that may hinder it.

If intervention to bring about change is the intended outcome of the assessment process then an understanding of the occasions in which communication could be created and the circumstances around which that can happen are essential. Important too, is an awareness of those situations in which communication fails to occur. In a number of instances, we observed that when people were not involved in deciding what they would do or wanted, where they were not interested or where they were not expected to be involved, communication was unlikely to be satisfactory.
People with severe disabilities have high support needs. Consequently they have few opportunities to act independently or exercise self-determination. Support needs have generally also been interpreted as indicating lack of ability to be able to make choices or decisions. Inevitably this has resulted in even fewer opportunities for people to act for themselves. Initial intervention therefore needs to focus on an understanding on the part of staff and support people of what individuals with communication difficulties do, the context in which they do it and then on the provision of multiple opportunities in which communication generally, and the use of augmentative strategies specifically, can be encouraged.

Central to the intervention process are the beliefs and attitudes that people without disabilities have towards those with disabilities whom they support. In this study there were distinct variations in the results from the two settings in which Dean, Glenn, Helen and Vivienne lived and worked. It was apparent that in the situation where the focus was on achieving the goals as set down in the Individual Programme Plan and where the programme was built around this focus, communication gains were modest. In such a setting, although the provision of choices was seen as an important aspect of the work of staff, the choices provided were limited. Further, where the choices made by individuals were contrary to what staff wished, those individuals were seen as demanding and difficult. By contrast, where individuals were seen as people and as friends, albeit by paid staff, communication gains by both the staff and the individuals in question were greater.

People without disabilities who work in the field of human services hold a great deal of power over their clients. It is, to a large extent, these staff who can control the quantity and quality of interaction which people with disabilities have with others. Those people who hold their disabled clients in some esteem and who value them as people are far more likely to have relationships that are reciprocal and which therefore involve interactive communication episodes. It is this sort of an environment that enables people with severe disabilities to use their communication skills to effect change and to participate in relationships with others. In this study, each individual continued to use those idiosyncratic strategies that they had always used to attempt to
establish interactions with others while, in some cases, they learned to use new strategies. When staff were receptive to these strategies, communication occurred at a high rate. In a basic sense therefore, staff need to establish interactions that are open ended and positive, they need to expect responses from people with communication difficulties, recognise the strengths that partners bring to interactions and also, recognise the communicative potential in individual's behaviours.

An environment that is stimulating to people has been shown to be a good basis on which to establish communication. Such a situation provides information about which to communicate, creates opportunities for choice and motivates people to engage in activities. The staff who work with individuals with disabilities also seem to find such an environment useful in supporting their own communication. Once staff became attuned to the communication strategies used by Dean, Glenn, Helen and Vivienne and increased their own communication, the initiations and responses made by the disabled participants began to drop. Although this change was recorded over a short period only, it is important to address. Clearly there is an optimum level of communication at which both the quantity and quality of interaction is sufficient for an individual's needs. However staff familiarity with the needs of the disabled participants could also have resulted in staff anticipating the needs of their clients rather than waiting for them to initiate a request for support themselves. While this may not unduly affect the quality of interaction occurring between staff and their clients, in situations where communication between people may be limited, it is important to ensure that individuals with disabilities have maximum opportunities to express their own needs, to make their own choices and ultimately to choose when, and with whom, they interact.

**Postscript**

At the time of writing it is two years since this study was completed. Dean, Glenn, Helen and Vivienne continue to spend their days in the vocational setting, which has moved premises. The Manager of this centre left and the previous deputy manager now leads the team. One other staff member has left and there have been two new staff appointments.
Glenn continues to use facilitated communication to make choices and decisions about the activities that he wants to be involved in and foods he wants to prepare on cooking days. With some physical support at the wrist he points to his choices from the array of options that are printed daily on to a whiteboard. With the same physical support, he will "talk" with one staff member about more detailed issues using a laminated sheet that has the letters of the alphabet printed on it in the same layout as a keyboard.

Vivienne has not continued to have a high level of access to her communication book. Once the study was completed it became apparent that she needed to have access to a greater range of options than was available in the book as originally designed for her. Staff had been informed that this would be the case and that they would need to expand the number of symbols available to Vivienne beyond the 56 included in the original book. Staff were asked to identify the vocabulary that they thought should be included in the book and to provide these options as and when it became apparent that her needs were not being met. Vivienne began to use combinations of symbols, symbols and real objects and gestures to convey her messages. However, the communication book was not extended and it did not meet her increasing communication needs. In a recent discussion the new centre manager admitted that "we have not kept up with Vivienne".

The choices made available to Helen through the augmentative strategy designed for her have not continued to be used in the vocational setting. Although Makaton symbols (Walker, 1991) are now used much more widely in the centre, they are not offered to Helen on an individual basis. As a result of the difficulties Helen has in maintaining her attention to any stimuli, the use of symbols on a board to which she is not individually directed, are ineffective. Similarly, Dean's communication strategy is unused in this setting. He currently appears quite depressed, has lost a significant amount of weight and he is very withdrawn.

Vivienne has been moved to a new house. It was felt that she was ready to be more independent and that her needs would be better met
in a smaller, more family oriented setting. Although she may have been told about this move, she did not appear to be given the opportunity to comment on whether she wished to make the transition or not. The Manager of her previous residential setting also has responsibility for the management of Vivienne's new home. She regularly uses the communication book with Vivienne in her new home and has tried to encourage the staff of that house to use the book with Vivienne. To date that has not happened. Vivienne only ever took the book to those people she knew could provide her with the physical support she needed to use it. Consequently, apart from the visits of the Manager to the new house, there is nobody that Vivienne can communicate with.

In his residential setting, Glenn had access to an electronic communication device which he had initially carried between his residential and the vocational setting. This device had a paper tape print out. When using it, Glenn would periodically rip the tape that had been used and stuff it into the pocket of the person with whom he was communicating. After a time he chose to use a laminated letterboard, the same as the one he preferred to use in the vocational setting. His earlier actions indicated that he did not wish there to be a record of what he had said. His later preference for the letterboard confirms this view.

Although Glenn does not use facilitated communication a great deal, he will communicate with several of the staff members in the residential setting using this strategy. Staff feel that his verbal language has become more understandable and that he uses speech, gesture and proximity much more successfully than in the past. At the times that he cannot convey his message using these strategies, he will get his letterboard and use that. Staff have also commented that Glenn seems to be more contented in himself than prior to the study. There have been fewer instances in which Glenn has damaged himself or others, he seems to be happier to engage with people and he seems to be more independent in his actions.

Helen's communication strategy has fallen into disuse in the residential setting as it has in the vocational setting. Of all of the participants, Helen is least independent in her actions and requires a great deal of support
to do anything. Although she successfully used her augmentative strategy in conjunction with her idiosyncratic communication skills, staff still have to respond to Helen's initiations before she gains access to the augmentative system. This has not happened.

Dean continues to use his blinking with success in the residential setting. He will go and stand next to people when he wants something and he blinks to accept an option or turns away if it is not what he wants. As has already been noted, he seems most unhappy currently and avoids most people. Nonetheless, his strategy remains useful to him and it is widely used by the residential staff.

People who have severe intellectual disabilities have just as much to offer our community as do other people. Their perceptions of the world are as unique as any others but theirs is lent an additional perspective because of the ways in which their impairments affect their lives. To understand that experience requires a significant commitment on the part of support people.

People working in this field must go much further in search of relationships and friendships with people with severe disabilities. It is rewarding work but it is hard work. Severe disability means that people are sometimes unable to participate with others or to show feelings. In the course of our relationships we all need those things. When we do not get them we can be easily put off. If in the course of our work, we don't get feedback and reassurance we can easily become disenchanted with that work. People in this field need support. They need training and they need recognition for what they do. All of the staff in this study wanted to do a good job, they were all motivated and they were receptive to what we were trying to do, but they could not do it all by themselves.

When other people understand you and can act on your choices and follow your lead, you have power. This is just as true for people with severe intellectual disabilities as for those of us without them. This study has shown that it is possible to develop an understanding about people and their lives from within the context of the environments in which they live and work. It has also shown that sustainable changes
can be made to the ways in which we work so that the people for whom we work can take more control of their lives than we have previously allowed. However, sustainable changes have to be sustained. When you are dealing on a daily basis with people who need assistance for many things, that extra work that you take on, no matter how important it is, can get lost in the things you have to do. This is especially true if change is slow and sometimes hard to see.

If we are serious about inclusion then there is no half measure with respect to communication. We must look at how we allocate our resources and we must ensure that they go where they can best be used for the benefit of everybody. An augmentative communication strategy is not necessarily the answer, but quality support for staff, on-going training and specialist and on-going input on communication is. More staff is not the answer, more support is. If we have well trained and well supported people doing the work, we can make change, we can sustain it and we can improve on it.
This study has shown that assessment of the communication skills of people with severe intellectual disabilities in the social, emotional and physical environments in which they live and work yields considerable information about those skills. Detailed running records, coded behaviours which were extracted from those records and an environmental checklist were taken over a period of 10 months of four adults with severe intellectual disabilities and all of the staff who interacted with them. Three observers collected this data. The consistency of the data collected by the observers and concurrence by a multi-disciplinary team as to the interpretation of that data provided support for the construct validity of the use of the strategies described to gather the information.

With respect to assessment, the role of the communication partner was shown to be critical to the development of an understanding of the communication used by people with severe disabilities. The clues available from others, the extent to which others are prepared for communication to take place and the awareness that others have of the strategies used by individuals will all affect the opportunities available for communication and the quality of any resulting interactions. Central to the assessment process therefore, is an analysis of the extent to which the behaviour of potential communication partners facilitates or mitigates against communication taking place.

Arising from the assessments of the communication of Dean, Glenn, Helen and Vivienne was the question of communication intervention. The staff who worked with the disabled participants were largely unaware of the communication strategies being used by those participants or of the effect of their own behaviour on the communication process. Initial intervention therefore focused on all of
the staff who interacted with Dean, Glenn, Helen and Vivienne. The literature has suggested that if in-service training for staff is to be successful, then it must focus on specific problems or issues of practice (McLeod et al., 1995). In this study, staff training focused on the communication profiles that described each of the disabled participants as communicators in the environments in which they interacted with staff. Staff then engaged in problem solving sessions to identify those aspects of the social, emotional and physical environment that did not support communication and which could reasonably be changed. By focusing on staff in the first instance and on making practical changes to the environments in which people worked, sustainable changes to the communication that took place between Dean, Glenn, Helen and Vivienne were achieved.

It is significant that those people who saw themselves as responsible for training the disabled participants saw fewer of the communication behaviours the participants used. Those staff who, while concerned with assisting people to develop skills, offered a range of choices and options from which the disabled participants could select, were more successful in responding to and initiating communication with the disabled participants. A significant finding was that while it was important for staff to provide supports and assistance to the people with whom they worked, they were perhaps better to do so by adopting a role that was somewhat less formal than the teacher/trainer role. As noted by Meyer, Peck, & Brown (1991, p. 647) with respect to residential services:

Rather than teaching residential staff in family scale homes in the community how to deliver rewards and keep observational data, perhaps we ought to regard them as live-in peer supports, and just ordinary people who will interact with people with disabilities in a natural and genuine way if we do not intrude by teaching them otherwise.

There may be greater expectations that staff in day services will teach people the acquisition of skills, and lesser pressure for staff providing a home environment in a residential setting. However, the results achieved between communicators in less formal environments such as the residential setting in this study, do provide a number of suggestions for service development. The results of this study indicate that where the disabled clients of a service have a range of options to explore and
from which to choose that occur naturally in people's daily lives, communication development is enhanced to that which occurs in more formal settings. People with severe disabilities are typically isolated from the community. This has meant that the chances to make choices and to exercise preferences have been limited. In order to explore new options, this study has shown that where strong relationships exist between people with severe disabilities and their staff, as was the case in the residential setting, they will feel safe with the staff supporting and on that basis, are more likely to try new experiences and activities.

On the basis of communication profiles, augmentative communication strategies were designed for the four disabled participants in the study. Key staff members were trained, along with Dean, Glenn, Helen and Vivienne in the use of these strategies. Where the disabled individuals were able to take a measure of control of the use of their communication strategies, their introduction into the settings in which they lived and worked was successful for as long as staff were prepared to continue to use those strategies. In Helen's case, where she continued to require a high level of support to access her communication strategy, its use was minimal and not maintained.

People with severe disabilities have high support needs and as such, often require ongoing assistance to access augmentative communication supports. To this end, staff awareness of the opportunities for communication created by Dean, Glenn, Helen and Vivienne was an essential component of the use of augmentative communication strategies. Again, this demonstrates the critical importance of staff training.

When the overall findings from this study are considered in the light of communication assessment and intervention with people with severe disabilities, a number of practical implications are suggested.

**Implications for Understandings about Severe Intellectual Disability**

There was a mismatch between the data collected in this study, the beliefs of staff about the disabled participants, and those assessments
that had been completed on Dean, Glenn, Helen and Vivienne using a behavioural approach. The implication of this is that researchers and practitioners need to develop and adopt practices that will enhance understanding about the experience of severe intellectual disability and lead to the creation of social, emotional and physical environments that will facilitate the development of communication and interaction.

During interviews a number of staff commented that the choice making, participatory and communicative skills that Dean, Glenn, Helen and Vivienne had were extremely limited. Indeed, previous traditional assessments had found them to be severely intellectually impaired and lacking in any functional communication. The assessment strategies devised for use in this study reported numbers of behaviours and skills that were not apparent from previous assessments, nor were they part of the understandings of many of the staff. Dean, Glenn, Helen and Vivienne were extracting meaning from the events occurring around them and the comments directed to them. They also acted on many of those events and comments. If these people with severe intellectual disabilities were able to communicate a range of information beyond that expected of them, then this raises questions about our measurement and understandings of severe intellectual disability.

The assessments completed in this study were based on running records of all of the behaviour used by Dean, Glenn, Helen and Vivienne and those with whom they interacted. In the initial phase, approximately 17 hours of observation were completed over 12 weeks. The accounts of the communication skills of these people grew out of observations completed in the course of their daily lives. In many respects they are similar to the accounts Goode (1994) collected of people with Rubella syndrome. His case studies raised a number of issues with regard to the value of traditional assessment strategies with people with such severe disabilities:

What I had discovered was a history of fairly serious conflicts between assessments of Bianca made at home by her parents and those made at school by professionals. Similar to what was observed on the ward with Christina, Bianca was socially constructed, and antithetical claims were made by school staff and family members. They disagreed in detail about Bianca's capabilities and appropriate treatment for her...Parents who have lived with children with severe disabilities often disagree about professional assessments of their children. Many of these parents have discovered what I
have referred to elsewhere as the "systematic clinical underestimation of competencies in the family context". (Goode, 1994), p55)

Traditional understandings about intelligence have left us with the view that it has something to do with cognitive capacity (Gould, 1981) and that the lower an individual's measured level of skill or ability is, the lower their intelligence. People with severe intellectual disabilities invariably experience significant motor or movement difficulties that preclude them from behaving or communicating in ways that can be readily understood (Rogers, 1992). The form that an individual's behaviour takes will be affected by their impairments. This will affect the ways in which a person with a severe disability can interact with others. The failure of people with and without disabilities to make connections must in part result from the lack of understanding the non-disabled partner has of the function of their disabled partner's behaviour. It has been argued and demonstrated in this study and in others (eg. Gleason, 1993; Goode, 1994), that the understanding of how the form of an individual's behaviour will affect its function can only come over time. Until we can recognise the communicative skills used by people with severe disabilities and until we can begin to understand a little of their lives and experiences, we cannot make too many judgements about what their cognitive skills or abilities might be. As has been discussed already, the social, emotional and physical environment in which people live and work has a significant effect on the quality of the communication that occurs between people. The "props" and the "prosthetics" that are available to people in the course of their communication over time, appear to enhance their understandings of each other's messages. If we remove those props then we diminish the potential for people with severe disabilities to extract meaning from their surroundings. We also reduce the likelihood that we, as communication partners, will understand what people with severe disabilities mean by their actions and how their impairments affect those actions.
Implications for the Training and Support of Staff

There are two major implications for staff that arise from this study. First, staff need to be familiar with the communication strategies of their disabled clients. Second, the opportunity for people with severe disabilities to take the lead in determining the services delivered to them is a clear issue with respect to the development of services.

Knowledge about Individuals' Communication Styles

The staff involved in this study were motivated to do a good job, to get it right and to achieve something. In one of the settings however, they took a role that was very different to that of their colleagues in the other setting. The vocational staff saw it as their role to develop and deliver a programme focused on the achievement of Individual Programme Plan goals. While the residential staff were also concerned about Individual Programme Plan goals, they merely provided a guide for what could be done with people. Central to the work that the residential staff did was the desire to ensure that what Dean, Glenn, Helen and Vivienne did, they chose to do from a range of options and that they got some pleasure from the activities and events in which they participated.

This difference in focus was particularly relevant given the very different results obtained from observations in each setting. Staff and the disabled participants communicated more with each other in the residential setting, they communicated for longer and they communicated for a broader range of purposes. The residential staff generally adopted the use of the augmentative strategies more easily and they sustained and built on the changes to the communication environment for longer. Clearly, the attitudes held by staff about the people with whom they worked (Malouf & Schiller, 1995) made a difference to both the quantity and the quality of the communication they had with Dean, Glenn, Helen and Vivienne. Training helped (Tanner et al., 1991), but the differences remained.

There has been, in the field of human services, a belief that we, the professionals know what is best for people with severe disabilities. In
large part this has arisen because of our understanding that severe disability means that such people will remain like children (Heyman & Huckle, 1995) and will therefore have high support needs (Rees et al., 1991). However, the presence of high support needs cannot be considered to be the same as an inability to make judgements or to exercise choices. For as long as we continue to believe that people with severe disabilities cannot do the things we would like them to do until we have taught them (Danforth, 1997), we will continue to have low expectations (Edgar & Polloway, 1994) and we will continue to offer few opportunities for development (Kishi et al., 1988).

This section began by saying that all of the staff in this study were motivated to do their best by the people they supported. However, one group of staff seemed to feel that they needed to take the lead and provide the services that they thought their disabled clients needed. This attitude arose out of a belief that a number of the disabled participants did not know about choices and that they could not be expected to participate in the activities and events going on around them. The other group of staff saw it differently. They felt that they were there to suggest options for "the guys" but not to dictate what they did or when they did it. As noted in the literature, where staff are more liberal in their attitudes and where they are more comfortable in what they are doing, they identify higher competencies amongst the people with whom they work (Shafer et al., 1989). The consequence of this belief would appear to be greater interaction and choice, with and by people with severe disabilities. People with severe disabilities experience difficulties in interacting with others. In order to understand them therefore, communication partners have a greater responsibility to create opportunities for communication, to recognise and respond to initiations and to provide support for that communication to happen. The benefits of doing so are obvious. Support for staff must therefore begin with training and on-going mentoring in the recognition of the strategies used by people with severe disabilities in communicating.
Taking the Lead from People with Severe Disabilities

Support for staff needs to be more than assistance to understand communicative behaviour when they see it. It is also more than the creation of opportunities for people with severe disabilities to make choices and have them recognised with the use of augmentative strategies. Communication between people with and without disabilities is only as good as the degree to which the communication partner is prepared to act on the message they have received. To this end, there is a clear need for support for people who choose to work in this field to make changes to the ways in which they work. If we are serious about communication then we must also be serious about enabling the people we are serving to become the ones who determine what happens to them.

This is not to say that we stop what we are doing and wait for people with severe disabilities to start taking charge. When people's experience of the world has been severely limited by the beliefs and actions of the community into which they were born, they rarely have the knowledge on which to base preferences or to make decisions. What is advocated here is that we move away from a focus on skill building and concern ourselves with the creation of opportunities for people to gain experience of their local community and for them to make decisions about the skills they would like to develop.

The philosophy of inclusion (Falvey, 1986) has been well articulated in the literature. It would appear however, that this rhetoric has had little impact on the segregated services and isolated lives that people with severe disabilities experience. It has been argued that the inclusion of people with severe disabilities has had more to do with physical presence than actual community integration (Polloway et al., 1996). This is not surprising. The staff working in these services have to provide for a multiplicity of needs in the course of their days. The communication that people with severe disabilities use is often subtle and not easily understood, and so developing shared understanding is problematic. Consequently, opportunities to develop and share a vision of the way that services should look with the people who use those services is difficult.
People with severe disabilities, their advocates and their families have begun to manage their own funding and services in respect of housing (Klein & Black, 1993) and day services. While this is the direction in which human services should be moving, as a first step, staff in the field need to begin to address seriously their role in the provision of services. To do this requires support, it also requires vision and it requires hard work. The staff supporting Dean, Glenn, Helen and Vivienne would all agree that they should be working "for" them. In some ways they already are, in others they are not. The work that they currently do is hard, it is taxing and sometimes there are not many rewards. They cannot be left to make changes alone.

A significant implication from this study is the requirement of support for staff to learn about the communication used by the people they work with and for, and to create environments and relationships in which communication and understanding can develop. In addition, staff must be encouraged to use this knowledge to find out what it is that people with severe disabilities want out of the services they use. If we are serious about communication then we must also be prepared to act. This being the case, knowledge is not enough, on-going support and training is required to ensure that human services develop to serve the needs that people identify for themselves, not what "we" think that "they" need.

Implications for Leadership

The question of leadership in human services was also an issue in this study. The residential Manager saw the most important aspect of her role as being the work that she did with the residents. She saw herself as a role model for staff and the residents, as a teacher, a friend, advocate and confidante. She felt strongly that if the other staff in the house did not see her interacting with the residents in ways in which she felt interaction should occur, then the tone of the whole house would suffer.

The other staff in the residential setting followed this lead. Numbers of them saw that they were there for "the guys" and that staff should
provide some of the opportunities that "the guys" had missed out on as a result of having spent so long in institutional settings. They also felt that they were not there to force people to do anything, regardless of what the Individual Programme Plan said, but that they were there to provide options and to offer choices.

In the vocational setting the Manager's role was seen very differently. The Manager in that setting was responsible for the programme and the Individual Programme Plans, which were the "nuts and bolts of people's lives". In this setting, the Manager admitted that communication had not had the priority it should have, despite the 10 months of the study and later support. The other staff in the vocational setting saw themselves as being there to follow through with that programme, to get through their work, and to ensure that their clients developed to the greatest degree possible.

The Managers in both of these settings appeared to set the tone of the organisation that they ran. In one setting the focus was on quality relationships, in the other, quality programmes. However, programmes are only as good as the people in them (Kendrick, 1997). Quality derives from people, it does not derive from programmes. If for instance, communication is not seen as a priority by management, staff can be forgiven for not rising to the challenge of interacting with their clients as much as they might:

For leaders the task becomes one of both calling for and exemplifying a consistent commitment to quality in oneself and others, such that it becomes a part of who people are - that is, an ethical foundation in their identity. For instance, one cannot achieve an attitude of respect for clients by merely mouthing respectful things. The test of genuineness will require that you mean what you say and this is recognised as tangibly a part of who you are. (Kendrick, 1997), p13)

A focus by leaders on the people using a service is likely to result in a higher quality service than a focus on organisational issues. Leaders need to be credible, and to be prepared to engage with others, regardless of their level of need. They have to lead by example. Work in this field is inextricably bound up with the lives of people who use the services provided. If quality interaction and communication does not occur between users of services and the management of an organisation staff may not see it as their role either, and the
organisation in which they work may lose its direction because it loses its focus. If there is no focus, then there is no way forward. Staff will no doubt continue to do their work but without direction will inevitably concentrate on the mechanics of the "job" rather than on the people they are there to serve.

Interestingly, the ethic espoused by the Boards of Trustees, the governing bodies of the residential and vocational services, were also very different between those services. The Board and the management of the residential service had wanted to establish the "Harrods of residential services". However, the mission of the vocational service was such that there was the feeling that little could be expected of the people using the service. Even though the Manager had moved to change the mission statement, one wonders at the extent to which the feeling of the Board of Trustees had affected the climate and tone of the vocational environment. Just as low expectations result in minimal development (Edgar & Polloway, 1994), they are likely to result in minimal quality.

The data collected in this study illustrated a number of differences in the communication occurring in each setting. The management styles advocated in those settings were also very different. The extent to which management sets the tone of a workplace and determines the quality of the service delivered is an issue that warrants further study.

**Implications for Research on Communication in Natural Settings**

Much of the research on communication and people with severe disabilities has focused on the individual with the disability. As a result of that, the impact that the social and physical environment has on an individual's communication has been ignored. A major implication from this study is that where assessment of an individual is to take place, that assessment must occur in the setting in which an individual usually lives and works. It must also seek out information as to the availability and adequacy of social and physical supports in that environment.
This study set out to understand the communication of four people with severe disabilities in the social and physical environments in which it occurred. The premise on which this study was based was that all behaviour communicates, and everybody, regardless of level of need, communicates. In this study, the communication of Dean, Glenn, Helen and Vivienne was strongly affected by the behaviour of others. The clear implication of these findings is that assessment tools need to be sensitive enough to identify all of the behaviours that people use and the contexts in which they use them, as well as the extent to which potential communication partners are receptive to the strategies used by individuals with severe disabilities.

In this study, 25 hours of observations using running records were undertaken over a period of 10 months. Codes of behaviours were extracted from the running records to determine the frequency of the communication in which people engaged.

The running records and the coded observations extracted from them provided a great deal of rich data that enabled the development of an understanding about the communication of Dean, Glenn, Helen and Vivienne. Early in the study it became apparent that their communication was impaired by the behaviour of others in their social and physical environments. Most of the communication opportunities created by the disabled participants went unnoticed, much of the communication that staff initiated was to give instructions and there were few activities or events in which people participated that created occasions for communication.

After each observation was completed the observer went through a checklist made up of items drawn from the literature that supported communication in the wider environment. The checklist supplemented the running records by providing information about the nature of the activities available, the relationships between staff and clients, relationships between clients, the communication systems available and the physical environment. It provided useful information about the effect of the wider environment on the extent to which staff generally recognised communication initiations, or the communicative intent of behaviour. It also provided useful information on how change arising
from the staff training intervention in particular, affected the communication environment.

In retrospect however, too many of the items on the checklist were focused on the staff's ability to foster communication rather than on their recognition of the communication strategies used by the disabled participants and their ability to act on those communications. In many ways therefore, the checklist began with the assumption that the disabled participants in the study did not already communicate a great deal, or understand that which was happening around them. The checklist therefore focused on the provision of stimulation and encouragement to do so.

In the checklist, staff were expected, among other things, to initiate interactions in the appropriate modes for their clients. While this sounds appropriate in theory, the fact was in this case, that Dean, Glenn, Helen and Vivienne showed that they responded to the comments made by staff without a great deal of difficulty. Although staff sometimes supplemented their verbal interactions with physical and visual prompts, the primary mode of staff initiated communication was speech, and this seemed to suffice. In reality, it was the staff who needed communication directed to them in modes other than those which Dean, Glenn, Helen and Vivienne used! To this end, the checklist should have focused a great deal more on the ways in which staff responded to the initiations of the disabled participants and the environmental supports that should have been available for staff to respond.

There is good reason to create environments in which communication is facilitated. If we did not, language and communication skills could not develop in our young. If in working with adults with severe disabilities, we accept that we should be augmenting the communication that people are already using, then our social and physical environments must be receptive to that communication.

People with severe disabilities need support and assistance for many of the requirements of daily living. In this study we saw that that need extended to the use of augmentative communication as well. At least in the short term, staff had to offer the use of augmentative strategies
once a communication opportunity had been created by either Dean, Glenn, Helen or Vivienne. Within the context of activities, a range of options need to be available, staff need to be observing the people with severe disabilities that they work with for signs of preference or choice, checking with those people to ensure their understanding and acting on those choices. In respect of relationships with clients, staff should work towards the establishment of relationships with their clients, look for behaviours that convey information about relationship preferences and desires and respond to those behaviours.

We saw in the present study that when interactions were initiated by Dean, Glenn, Helen and Vivienne, they were consistently longer than the interactions initiated by staff. When staff did respond to the disabled participant's initiations, perhaps they were more receptive to the communicative behaviour of their clients. Perhaps Dean, Glenn, Helen and Vivienne were more motivated to interact because they had chosen the time and the topic of that interaction. Whatever the reason for the length of interaction, it would seem beneficial to the communication process that the disabled participant have at least an equal opportunity to determine the nature and the course of interactions as do their communication partners. In developmental terms, a balance of power (Bronfenbrenner, in Smith, 1992) between participants in any exchange is beneficial to the development of social and communication skills. In particular, a receptive and interactive communication partner, will inevitably foster communication to a much greater extent than a partner who is controlling or custodial in their interaction (Glynn, 1985). To this end, an environment that is focused on the recognition of and response to an individual's communication opportunities is an essential component to the development of communication between people.

Conclusions

With the use of running records, coded behaviours extracted from the running records, interviews and an environmental checklist, this study has illuminated the communication skills and abilities of Dean, Glenn, Helen, Vivienne and the staff with whom they interacted. The results revealed that these people were attempting to establish interactions
with others on a frequent basis and that they were using a number ofbehaviours with which to achieve this end. To a greater or lesserextent, staff did not recognise communication opportunities when theyarose and as a result did not often respond.

Communication and the provision of augmentative strategies for peoplewith severe disabilities should take place in environments that aregeared towards the development of an understanding of theidiosyncratic strategies that people use. To this end, staff working intheses services need support to adapt their practice to become morereceptive to their disabled clients.

The question of leadership in human services also emerged as an issuein this study. It is important that staff actually see their Managers-taking a lead in organisations and in ensuring that a service's positiveethos or philosophy is translated into practice. As workers in the fieldof human services however, like their staff, Managers need assistance,on-going support and training. A further and significant implication ofthis study is that once issues of communication between service usersand providers are to some extent resolved, services actually need tobegin to reflect the desires of the people they serve.

The practitioners in this study already worked hard, they were alreadydoing the best that they could within the confines of the services inwhich they worked. If we are serious about inclusion and aboutempowerment however, these services must change. Not only do peoplewith severe disabilities need support, so do those who support them.

He Whakatauki - A Proverb

He aha te mea nui?
He Tangata, he Tangata, he Tangata

What is the most important thing?
It is People, it is People, it is People
References


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Appendix One: Sample Running Record/Coded Observation Sheet

Encouraging E  
Discouraging D

Communication Opportunity CO  
Response R  
No Response NR

Mon. Part.1, Tues. Part.2, Wed. Part.3, Thurs. Part.4, Fri.

Name Glenn  
Setting Vocational

Date 22/11/94  
Time 9:45am

<table>
<thead>
<tr>
<th>Interaction</th>
<th>Enc/Dis</th>
<th>Code</th>
<th>Descript.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CO1</td>
<td>Rocking in chair, head back and forth, &quot;mmm&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Helen grining her teeth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Glenn stops rocking, restarts</td>
</tr>
<tr>
<td>4 E</td>
<td></td>
<td>CO2</td>
<td>Jane: &quot;Glenn, will ask you to move if that's ok, need to put towels away&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R1</td>
<td>Glenn stands and opens the door</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R2</td>
<td>Jane: &quot;You're the one&quot;, she passes him some towels</td>
</tr>
<tr>
<td>3 D</td>
<td></td>
<td>R1</td>
<td>Glenn puts the towels in the cupboard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R2</td>
<td>Jane: &quot;That's it, pointing she says, &quot;There's more room down there&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R1</td>
<td>Glenn takes the towels and puts them in the cupboard</td>
</tr>
<tr>
<td>1 D</td>
<td></td>
<td>R2</td>
<td>&quot;That's great, thank you&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R1</td>
<td>Glenn sits down again</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>There is a noise and he stands up again</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>Jane is searching in the cupboard</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
| E | R2 | CO1 | Jane: "Which one would you like to do?"
|   | R1 | Glenn choses a puzzle and goes and sits at the table
|   | R2 | Jane: "Would you like me to help?"
| R1 | "Mm"
| 1 | They both turn the pieces of the puzzle
| E | CO2 | Jane: "Do you think that we have time before tea? I think we have, you're fast, good at puzzles"
|   | R1 | Glenn is flicking his neck, "Mmm" And placing pieces of the puzzle
|   | R2 | Jane: "Now, can I have a turn, I'll put this down there"
| 2 | Glenn picks up another piece
| E | CO2 | Jane: "Which one is it? Do you know where it goes?"
| R1 | Glenn places the piece
|   | R2 | Jane: "I thought you might"
| D | Glenn continues to place pieces (he is right every time)
| E | CO2 | Jane: "You'll have the top finished in no time I reckon"
| R1 | Glenn is looking for pieces
### Appendix Two: Environmental Checklist

To be completed subsequent to any individual observations being completed.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Client</th>
<th>Staff/Clients ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Stimuli

1. **Type of available activity**
   - None
   - Leisure
   - Personal care
   - Domestic
   - Formal programme

To score in this area it is necessary for the target clients to be actually engaged in the activity in question.

- **Activity is compulsory**
  - Negotiable

A range of meaningful options are available.

- Activities and materials are appropriate for client group (ie. age, skill wise)
- Engagement in activity is client choice
- Communication about activity occurs prior to engagement
- Activities stimulate client interest
- Support for clients to request assistance are present prior to difficulties
- Activities stimulate potential for communication
- Activity is shared between other clients and staff
- Materials used in the activity do not inhibit interaction occurring

- Opportunities for turn taking occur
2 Relationships between staff and clients.
Staff in same area (1-2m) as target client/s

---
Staff convey respectful attitude to clients

---
Initiate interaction, particularly with those who do not use verbal language

---
Interaction occurs in the appropriate mode for the individual
Interactions open ended and positive
Expectation of, and Opportunities for response given

---
Staff act as facilitators and participate in activities as equal partners

---
Recognition of individual client strengths/needs and choice

---
Understanding of the potential communicative intent of behaviours

3 Group
Clients have easy access to other clients (within 1-2m)

---
Clients with ranges of communication styles and skills present

---
All clients familiar with each other

---
Attempts by staff at developing shared meanings among clients

4 Communication Systems
The client is in a position where initiations they make can be seen

---
Staff recognise client attempts to communicate either verbal, vocal, gestural, behavioural

---
Staff respond to communicative attempts
5 Physical Environment - where client located
Environment large enough to allow access to all participants

Layout stimulates potential for interaction

Other:
Appendix Three: Interview Guide,

Background Information

- How long have you worked at _____?
- Describe any relevant work experience
- Describe any previous or on-going relevant training

Interview Questions

- What got you interested in working at _____ in the first place?
- How would you describe your role as a staff person here? What do you think is the most important aspect of your job?
- What is your understanding of the kind of mission statement or philosophy behind _____?
- How much involvement or say do you have in the kinds of activities that take place at _____?
- If you are involved in the planning, what are the kind of influences or factors that shape your daily programme and clients involved in it? (What is the role of each person's IPP here?)
- What importance do you place on community integration for the four participants in this study? Could you give some examples to illustrate how this is reflected in the way that you work with individuals? Do your views on community integration change or become modified when considering someone like Gillian (a "more able" client)?

- What importance do you place on participation for the four participants in this study? Could you give some examples to illustrate how this is reflected in the way you work with them? Do your views on participation change or become modified when considering someone like Gillian?

Ask the next question twice using two different participants. Choose from Vivienne or Glenn the first time and Helen or Dean the second time.

- Do you think that _____ knows what it is to make a choice? Is there any way _____'s choice making could be enhanced? How would you describe _____'s ability to express him or herself in general?
Hypothetical Situations

I am now going to use some hypothetical examples to try to explore some concrete issues and situations concerning the four participants.
I would like you to think of somebody who you have worked with and how you would describe as a good staff person.
You won't be asked to tell me who this person is, but I would like you to describe what you think he or she would be trying to do in each of the following hypothetical situations.

Situation 1
This example involves working with Helen at lunchtime, assisting her to eat her lunch. What might a good staff person try to do in this situation, what might be running through his or her mind when assisting Helen?

Situation 2
A group of people are sitting at a table painting pictures. How might a good staff person assist Vivienne in this activity? If it is not raised, ask how this person would involve Vivienne in the group?

Situation 3
Glenn is going to the supermarket. What might a good staff person think he might get out of this activity? How might this differ from Dean going instead?

Conclusion

• What are your thoughts on the communication interventions about to take place? What form do you think they might take? Have you got any ideas, suggestions or hopes about the interventions?

• How have you found being observed over the past few months. How has it affected your job and the way you work with the participants?

• Have you any questions for me?

I would appreciate it if you would not discuss the details of this interview with the other staff at ____ until after Monday next week as they will all be asked similar questions. Would you like to see a copy of your transcript? Thank you very much for your time.
### Appendix Four: Results from the Environmental Checklist

#### Table One: Percentage Change in Availability and Suitability of Activities over the three phases of the study

<table>
<thead>
<tr>
<th></th>
<th>Dean</th>
<th>Glenn</th>
<th>Helen</th>
<th>Vivienne</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Residential</td>
<td>Vocational</td>
<td>Residential</td>
<td>Vocational</td>
</tr>
<tr>
<td>Compulsory</td>
<td>19-24-21</td>
<td>16-25-15</td>
<td>12-2-0</td>
<td>16-4-0</td>
</tr>
<tr>
<td>Negotiable</td>
<td>9.5-8-28</td>
<td>20-35-15</td>
<td>19-4-30</td>
<td>35-40-42</td>
</tr>
<tr>
<td>Support for clients to request help present</td>
<td>7.5-28-15</td>
<td>9-36-20</td>
<td>5-4-28</td>
<td>5.7-25-40</td>
</tr>
<tr>
<td>Opportunities for turning occur</td>
<td>0-25-23</td>
<td>5-36-30</td>
<td>10-4-14</td>
<td>2.8-3.3-26</td>
</tr>
</tbody>
</table>

**Note:** Percentage change is presented in this table as three figures
- percentage presence of the checklist item in checklists completed prior to staff training
- percentage presence of the checklist item in checklists completed up to 3 months after staff training
- percentage presence of the checklist item in checklists completed 3-5 months after staff training.
Table Two: Percentage Change in Relationships Between Staff and Participants over the three phases of the study

<table>
<thead>
<tr>
<th></th>
<th>Dean</th>
<th>Glenn</th>
<th>Helen</th>
<th>Vivienne</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Residential</td>
<td>Vocational</td>
<td>Residential</td>
<td>Vocational</td>
</tr>
<tr>
<td><strong>Staff in same area</strong></td>
<td>52-78-93</td>
<td>68-96-92</td>
<td>41-81-60</td>
<td>61-77-71</td>
</tr>
<tr>
<td><strong>Staff convey respectful attitudes</strong></td>
<td>42-64-57</td>
<td>52-71-77</td>
<td>35-72-70</td>
<td>49-54-42</td>
</tr>
<tr>
<td><strong>Interaction in appropriate mode for the individual</strong></td>
<td>0-4-7</td>
<td>5-10-15</td>
<td>6-27-10</td>
<td>7-4-14</td>
</tr>
<tr>
<td><strong>Interactions open ended and positive</strong></td>
<td>0-24-50</td>
<td>7.5-17-46</td>
<td>6-45-70</td>
<td>7-9-28</td>
</tr>
<tr>
<td><strong>Responses expected</strong></td>
<td>9.5-20-36</td>
<td>1.8-32-38</td>
<td>6-36-70</td>
<td>7-9-28</td>
</tr>
<tr>
<td><strong>Staff act as facilitators</strong></td>
<td>0-0-7</td>
<td>1.8-21-0</td>
<td>3-18-10</td>
<td>10-13-14</td>
</tr>
<tr>
<td><strong>Staff recognise client’s strengths and choices</strong></td>
<td>0-0-14</td>
<td>0-3.5-7</td>
<td>9-18-30</td>
<td>4-4-14</td>
</tr>
<tr>
<td><strong>Staff recognise intent of behaviour</strong></td>
<td>0-0-14</td>
<td>1-8-14-0</td>
<td>12-18-30</td>
<td>2-8-9-14</td>
</tr>
</tbody>
</table>

**Note:** Percentage change is presented in this table as three figures
- percentage presence of the checklist item in checklists completed in phase one
- percentage presence of the checklist item in checklists completed in phase two
- percentage presence of the checklist item in checklists completed in phase three.
Table Three: **Percentage Change in Staff Facilitation of Relationships Between Participants and Their Peers over the three phases of the study**

<table>
<thead>
<tr>
<th></th>
<th>Dean</th>
<th>Glenn</th>
<th>Helen</th>
<th>Vivienne</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Residential</td>
<td>Vocational</td>
<td>Residential</td>
<td>Vocational</td>
</tr>
<tr>
<td>Clients have easy</td>
<td>71-88-86</td>
<td>69-92-92</td>
<td>87-90-90</td>
<td>82-90-71</td>
</tr>
<tr>
<td>access to other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clients with a range</td>
<td>76-80-71</td>
<td>47-64-69</td>
<td>87-63-90</td>
<td>50-54-42</td>
</tr>
<tr>
<td>of communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>styles present</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All clients</td>
<td>80-88-86</td>
<td>62-92-84</td>
<td>87-81-90</td>
<td>76-90-71</td>
</tr>
<tr>
<td>familiar with each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attempts by staff</td>
<td>3.7-7-0</td>
<td>3-0-0</td>
<td>2-4-0</td>
<td>2.8-0-0</td>
</tr>
<tr>
<td>to develop shared</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>shared meaning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Percentage change is presented in this table as three figures
- percentage presence of the checklist item in checklists completed in phase one
- percentage presence of the checklist item in checklists completed in phase two
- percentage presence of the checklist item in checklists completed in phase three.

Table Four: **Percentage Change in Staff Recognition and Response to Communication Initiations by Participants over the three phases of the study**

<table>
<thead>
<tr>
<th></th>
<th>Dean</th>
<th>Glenn</th>
<th>Helen</th>
<th>Vivienne</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Residential</td>
<td>Vocational</td>
<td>Residential</td>
<td>Vocational</td>
</tr>
<tr>
<td>Client is where</td>
<td>85-100-100</td>
<td>67-100-84</td>
<td>87-100-100</td>
<td>91-89-85</td>
</tr>
<tr>
<td>initiations can be</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>seen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff recognise</td>
<td>0-4-14</td>
<td>1.8-25-0</td>
<td>16-27-30</td>
<td>4-9-14</td>
</tr>
<tr>
<td>attempts to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>communicate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff respond to</td>
<td>0-4-14</td>
<td>1.8-25-0</td>
<td>12-27-30</td>
<td>4-0-14</td>
</tr>
<tr>
<td>attempts to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>communicate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Percentage change is presented in this table as three figures
- percentage presence of the checklist item in checklists completed in phase one
- percentage presence of the checklist item in checklists completed in phase two
- percentage presence of the checklist item in checklists completed in phase three.
Table Five: Percentage Change in the Layout of the Environment to Facilitate Communication over the three phases of the study

<table>
<thead>
<tr>
<th></th>
<th>Dean Residential</th>
<th>Glenn Residential</th>
<th>Helen Residential</th>
<th>Vivienne Residential</th>
<th>Vocational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment large enough to allow access to all clients</td>
<td>90-100-93</td>
<td>90-100-90</td>
<td>95-100-71</td>
<td>91-100-93</td>
<td>91-100-75</td>
</tr>
<tr>
<td>Layout stimulates potential for interaction</td>
<td>71-100-92</td>
<td>90-100-90</td>
<td>95-100-71</td>
<td>91-100-93</td>
<td>91-100-75</td>
</tr>
<tr>
<td></td>
<td>66-68-50</td>
<td>53-64-15</td>
<td>77-36-20</td>
<td>73-68-42</td>
<td>71-58-60</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>76-69-60</td>
<td>68-56-50</td>
<td>73-78-46</td>
</tr>
</tbody>
</table>

Note: Percentage change is presented in this table as three figures
- percentage presence of the checklist item in checklists completed in phase one
- percentage presence of the checklist item in checklists completed in phase two
- percentage presence of the checklist item in checklists completed in phase three.