An Evaluation of the Planning Program
Using Goal Attainment Scaling.

by

Toni Mitchell

Submitted as part of course requirement for
Master of Community Health (by Coursework)
School of Community Health
Faculty of Health Science
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Abstract

Therapists providing individualised programs in rehabilitation are increasingly challenged to document and present the outcomes and effectiveness of their services. For program evaluation to be feasible, a methodology is required that is compatible with the characteristics, demands and priorities of clients as well as therapy environments.

Goal attainment scaling is a method to evaluate services based on the attainment of individual client or program goals. This method was used to evaluate the effectiveness of a home based, individualised, cognitive rehabilitation intervention for an eight year old boy, long term after traumatic brain injury. The child and family participated in the Planning Program, designed to teach compensatory strategies for planning and to support these with minor environmental modifications. Background information and an analysis of the theory and model behind the Planning Program are presented.

The evaluation results revealed an overall goal attainment scale score (T score) of 68.70, indicating that the overall program goal had been accomplished, at above the expected level. The implications, advantages and disadvantages of goal attainment scaling as a method to evaluate individualised programs in paediatric brain injury rehabilitation are discussed.
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1.0 INTRODUCTION

Health professionals are increasingly confronted with issues relating to the value of their programs, and specifically to engage in outcome or "program" evaluation (Basmajian, 1975; Daley, 1987).

The purpose of this treatise is to trial and present Goal Attainment Scaling as a method of program evaluation for "The Planning Program". Knowledge relating to the program, its theoretical underpinnings, methods of outcome evaluation and their applications in paediatric cognitive rehabilitation will inform this process and presentation.

Clinical issues in evaluation and in cognitive rehabilitation for children with traumatic brain injury provide the background for further discussion on the use of Goal Attainment Scaling as a method to measure outcomes of individualised therapy programs.

This method is applied to the Planning Program, a cognitive rehabilitation program for children with planning and organisational difficulties following brain injury. The procedure and program outcomes are presented, along with a discussion of the advantages and limitations of Goal Attainment Scaling in this application.
2.0 LITERATURE REVIEW

2.1 Outcome Evaluation in Therapy and Rehabilitation

Evaluation means simply determining the value of something (Owen & Mohr, 1986, p95). In a climate of accountability and fiscal restraint, and in order to fully understand and delineate the substance of their work, health professionals are increasingly required to evaluate their programs (Royeen, in Pratt & Allen, 1989).

In an excellent resource, Ottenbacher (1986, p4) declares that establishing and demonstrating clinical effectiveness "should be an integral part of any structured therapeutic program". Moreover, he argues, every therapist providing service "has the responsibility to document, in a systematic manner, the effectiveness or non-effectiveness of the service provided to any given client" (p5). Here, Ottenbacher (1986), asserts the need to demonstrate not only the general validity of therapy programs applied to special handicapping conditions, but the 'validity' of the specific therapeutic procedures applied to individual clients in specific clinical environments. This, he suggests, applies particularly to physical and occupational therapists and other rehabilitation professionals seeking to demonstrate their accountability and to validate their intervention strategies simultaneously (p6).

In many therapy settings, however, more traditional research methods are not feasible and are inadequate for the purpose of evaluating programs and their outcomes. Evaluation research includes both program evaluation and program outcome components. Outcome evaluation, as the theme of this treatise, documents the effectiveness of therapy services, substantiating that program objectives are being met (Haley, Baryza, Lewin & Cioffi, 1991).

Terms in the evaluation literature are used inconsistently. 'Outcome' evaluation often refers to the time frame for evaluation ("long term") rather than a specific purpose and type (Green & Lewis, 1986; Ottenbacher, 1986). The term 'impact' evaluation, is also used to refer to that which deals with the assessment of a program's impact or the determination of whether the program worked (Rossi & Freeman, 1982), while in the community health literature these terms are
Suarez (1982) and Robinson (1984) put forward the main functions of program evaluation: determining whether program objectives are met; determining the effectiveness of programs; judging the value or worth of the program and; acquiring information necessary for policy makers or administrators. Herein lies the differences between program evaluation and other systematic investigations, such as client assessment, and research. Whereas research questions relate to determining "truth", and have high generalisation to other persons and situations, evaluation centres on program effectiveness, efficiency, "value" and determination of goal achievement. It has low application to other populations and circumstances (Royeen, in Pratt & Allen, 1989).

One approach to evaluation, described by Robinson (1984), is the goal attainment model. The underlying argument for this approach is that "programs ought to be assessed by measuring the extent to which a program attains its goals, specified in advance of the program by program developers" (p153). The setting of program goals, however, does not necessitate a particular approach to evaluation.

Goal attainment scaling ("GAS") first described by Kiresuk & Sherman (1968), is one method using a goal oriented or goal attainment model. Put simply, goal attainment scaling involves setting goals, implementing a program, taking measures to determine whether or not (and in some cases, to what extent) goals have been attained, and finally, using the information to modify future activities (Cusick, in press).

Goal attainment scaling originated in the community mental health field, but has since been employed as a method of evaluation in clinical, rehabilitation and residential settings, schools and higher education, welfare, health education, early intervention, day care settings and in management. Its application has been documented by a range of disciplines and in many program types, such as...
counselling and family therapy, psychotherapy, drug and alcohol treatment, physical rehabilitation and special education (Scott & Haggarty, 1984, p41), indicating its relevance and general usefulness as an evaluation tool.

Goal attainment scaling allows for both the individualisation of goals and the quantification of summary outcomes for all program participants, or for an overall program. It can be used then, with individuals and with groups, over the short or long term and is independent of the intervention or methodology chosen to reach individual or program goals. Scales are individualised to reflect realistic possibilities for each client or operation to be measured. This aspect is one of the unique contributions of goal attainment scaling to program evaluation, despite the well established practice of goal setting in therapy.

A major component of goal attainment scaling is expectation, where the target or expected outcomes are assigned a middle value (0) on a five point scale from -2 to +2. Higher values (+1 and +2) are given to outcomes that are better than that expected, and lower values (-1 and -2) assigned to outcomes worse than expected (Jewish Vocational Service, 1976). All outcomes are expressed in concrete, observable (or reportable) behaviours or events, which do not overlap nor leave gaps between levels. This is arguably the most challenging step in an otherwise simple procedure. The outcome behaviours represent specifically, the client's potential progress toward established goals, which in turn have been addressed in therapy. Ideally, outcomes are stated so objectively that an independent evaluator could observe participants at program completion, and rate their performance (Malec, Smigielski & DePompolo, 1991). This practice, however, gives less credence to the importance of the therapist's clinical judgement and knowledge of the client or group from prior assessments, as pointed out by Cusick (in press, p4). In some settings, of course, external evaluation may be impractical. At this point, goal setting practices are worthy of examination.

In order to establish goals for intervention that are individualised, relate to client needs, and represent realistic expectations of client performance, many authors advocate goal setting be carried out with input from the client, family and other
team members (Bonaguro, McLaughlin & Sussman, 1984; Clark & Caudrey, 1983; Lloyd, 1986; Ottenbacher & Cusick, 1990, 1993). Goals, state Ottenbacher & Cusick (1990, p520), "should be established in relation to the client's home, work and community environments" and must be "measurable, attainable, desired by all, and socially, functionally, and contextually relevant". Malec, and colleagues (1991, p139) argue that mutual goal setting "fosters ownership of and commitment to the determined goals".

In other studies (La Ferriere & Calsyn, 1978; Lloyd, 1986), this notion is further developed when goal attainment scaling is used as a treatment technique in itself, usually, because of the inherent value of structured goal setting. This goes beyond the original intentions of the authors (Kiresuk & Sherman, 1968). While effective in producing more positive outcomes, this may be considered a threat to the validity of a goal attainment scaling evaluation, since the process of measurement itself would be assumed to influence the outcomes (results).

Willer & Miller (1976) found that clients' ratings of goal attainment at the end of a program intervention in mental health, correlated significantly with most other measures of treatment outcome used, while therapists' ratings did not. Not surprisingly, this paper advocates for the involvement of clients in goal setting and in rating goal attainment, along with other more traditional outcome measures.

The goal setting process is followed by construction of the goal attainment scale itself, with possible outcomes or indicators delineated and weights assigned to each goal area. These weights indicate the relative importance of each goal area, so that the overall goal attainment measure represents the 'true' overall value of the program to those involved. This is the first major step in the goal attainment scaling process.

The time at which goal attainment will be rated is determined prior to the intervention and may be performed at any time during or following the intervention. For program evaluation, goal attainment is rated only once following
completedation of the entire treatment or intervention (Jewish Vocational Service, 1976). This rating is the second major step in the goal attainment scaling process.

Outcome scores (-2 to +2 for each goal area) are then aggregated to give a summary score or weighted average of attainment, corrected for the number of goals and the "intercorrelation of scales" (Kiresuk & Lund, in Schulberg & Baker (Eds), 1979). In this way, progress towards individual goal areas is clearly visible, while an overall indication of progress towards attaining program goals, or lack thereof, is also evident. Comparisons can be made across clients in so far as their progress towards and attainment of their own goals is measured and transformed into the standardised (comparable) T score.

The use of other evaluation measures and methods alongside goal attainment scaling is recommended throughout the evaluation literature (Ottenbacher & Cusick, 1990; Royeen, in Pratt & Allen (Eds), 1989; Willer & Miller, 1976). Any comprehensive evaluation, write Green & Lewis (1986) demands assessment of all four types of evaluation activity: program planning, program implementation, program impact and program efficiency (determining costs:benefits).

Functional measures of status (that is, discriminative assessments) are warranted in many settings alongside evaluation measures, but, note Ottenbacher & Cusick (1993, p351), these must not be confused with evaluation tools for individualised change or progress towards personal goals.

Applications of goal attainment scaling have been reported more recently in the rehabilitation literature. While none refer specifically to children’s brain injury rehabilitation, one study applied goal attainment scaling to adult post acute brain injury rehabilitation, (Malec, et al, 1991), with promising results. In rehabilitation, and particularly in brain injury rehabilitation, clients differ considerably in the nature of the problems encountered and the goals they pursue. "The goal attainment score allows comparison of a client’s relative success in achieving his or her unique .... goals" (Ottenbacher & Cusick, 1993, p350), making it particularly suited to rehabilitation settings.
In a comprehensive outpatient brain injury rehabilitation program, Malec, et al (1991) found goal attainment scaling useful to enhance participants self awareness of their problems and progress; to monitor progress; and to evaluate the program.

Johnston & Lewis (1991, p142) agree that brain injured clients are a heterogeneous group indicating the
"need for outcome measures to be sufficiently broad to detect meaningful improvements across this heterogeneity... (but) sensitive to the specific expectations, discharge environments, priority needs and differing goals for individual cases".

They support assessment of rehabilitation outcome measures to occur in the real world of the client and client-centred goals, "tailored to the needs and realistic potential of each client". From the above analysis, goal attainment scaling would appear to satisfy these criteria.

2.2 Theoretical Basis to the Planning Program

In childhood, head injuries are relatively common occurrences. The effects of traumatic brain injury on the developing child can present enormous challenges for their families, health professionals and educators involved in their long term rehabilitation.

A review of the literature relevant to cognitive and behavioural recovery, and the rehabilitation of executive function impairments long term after moderate and severe traumatic brain injury in children, was conducted prior to this application of the Planning Program and its evaluation. Late stage rehabilitation in this context refers to rehabilitation following the child's discharge from the acute care hospital and may occur along with recovery, years after the injury (Klonoff, Low & Clark, 1977).

Children in the late stages of recovery following brain injury are often normal in appearance, and in casual conversation may appear to have no residual problems. Many retain subtle cognitive deficits which manifest especially in the home and school settings. These might typically include deficits in attention, memory and
"executive functions", such as anticipation, initiation, goal selection, planning, organisation, self monitoring and self correction (Sohlberg & Mateer, 1989). These are usually independent of intelligence. Some children may not demonstrate such impairment immediately after the injury, and it may go unnoticed until adolescence or early adulthood, as community and parental expectations of the child change. When parents or teachers consider a child’s readiness for high school, for example, the child’s poor adaptive abilities may become apparent.

Lezak (1988) describes problems most burdensome to families after traumatic brain injury, and includes increased dependency among these. Dependency may reflect underlying deficits in organising, ordering and integrating thoughts and experiences, or inability to initiate ideas.

"All of these (persons) have difficulty planning and are therefore unable to take charge of their lives. They can be described as structure-dependent (or stimulus bound). That is, they need external guidance and support in those areas which normally require planning or organisation" (Lezak, 1988, p117).

The frontal lobes of the brain are particularly vulnerable to injury, with frontal lobe injuries being "common after injuries to the forehead or face" (Sohlberg & Mateer, 1989, p392). Kirby (1984, cited in Duncan, Rosen & Gerring, 1986), notes that "the major function of the frontal lobes is the selection and regulation of cognitive planning" (p106). They are thought to be involved in coordinating and regulating behaviour. However, it is clear that deficits in these areas can result from diffuse damage to the brain as well as from selective frontal lobe lesions. These behaviours are thus increasingly being described as "executive functions" rather than frontal lobe functions (Roberts, 1992). Deficits in executive functions in children and adults, "perhaps more than any other cognitive process, determine the extent of social and vocational recovery" (Sohlberg, et al, 1989, p232).

After birth, frontal lobe neuronal circuits continue to develop until around 2 years of age. However, frontal lobe function, including executive function, is thought
Executive functions are necessary for purposeful and goal directed activities. They include, but are not limited to:

**AWARENESS** - to be aware of self and surroundings, to be aware of limitations; (insight).

**GOAL SELECTION** - to anticipate and establish goals.

**PLANNING** - to formulate plans (behaviours) to achieve a goal.

**DRIVE/MOTIVATION & INITIATION** - to initiate and complete activities.

**INTEGRATION** or (REASONING) - to put together different pieces of information and make sense of it.

At age 10 - 12 years, adult level executive function is possible (Anderson, 1992), although individual differences, social and adolescent issues also play a part in this. The Planning Program to be described in the next section, is ideally used with this age group, although many younger children are also show flexibility in strategic behaviour and problem solving.

To differentiate the executive functions from cognitive functioning, Lezak (1983) notes that cognitive functions may refer to what a person can do or what a person knows how to do, while executive functioning refers to how and if the individual can complete a task, and usually affects all aspects of one's daily life.

Executive functions are necessary for purposeful and goal directed activities. Thus children's premorbid developmental levels must be considered when evaluating function in executive skills, along with other skills and behaviours.
Training in the use of deliberate compensatory strategies is indicated if the deficit (say, cognitive or executive) does not resolve spontaneously or cannot be remedied, and if the child has the cognitive and metacognitive prerequisites for strategy acquisition. "Students functioning at a 10 year old level or higher are

The Planning Program developed by the Paediatric Brain Injury Outreach Team at Westmead Hospital uses a compensatory approach, teaching strategies to compensate for problems in executive function - in particular, problems in planning and organisation. It does not aim to restore executive function, but to "replace poorly organised behaviours with guided routines that can be performed more independently and are successful" (Roberts, 1992, p52).

Executive function is difficult to assess. Formal test situations often provide the structure needed for a child with problems in this area. It may therefore be better evaluated in more natural settings (with help from the people who best know the child), or by comparing in both (Stuss & Buckle, 1992, p46; Sohlberg, et al, 1989). In the Planning Program, information is mainly gathered from formal neuropsychology assessments, semi-structured parent interviews and observation during planning activities.

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Training in the use of deliberate compensatory strategies is indicated if the deficit (say, cognitive or executive) does not resolve spontaneously or cannot be remedied, and if the child has the cognitive and metacognitive prerequisites for strategy acquisition. "Students functioning at a 10 year old level or higher are
mature enough to use cognition and to recognise the cognitive abilities that tasks require" (Cohen, 1986, p26). They are capable of learning how strategies improve their functioning in deficient skill areas, except where poor insight or denial of problems causes resistance or rejection of strategic assistance. According to Cohen (1986, p26), "younger children who may not understand the purpose of strategies can be taught procedures and habituate patterns that help them function more adequately".

Strategies taught are simple and rely heavily on a model called "Process Based Instruction", developed by Australian educationalists, Ashman & Conway (1989). This model teaches children to create personal plans for learning and planning strategies (the process) as they are taught skills or action (the content).

"Planning" refers to "the development of a scheme of action or the scheme itself (that is, the plan)" (Ashman & Conway, 1989, p108). The plan is an aid to learning and contains four elements: cueing (such as "What do I need?"); acting ("What do I do?"); monitoring ("Is it working?"); and verifying ("Is it correct?"). These elements distinguish the plan from task analyses and rules, since they can be altered to suit individuals and can meet specific learning needs. Poor monitoring of one’s behaviour for example, requires multiple check steps and cueing to be included in the plan.

Cicerone & Wood (1987) and Burke, Zencius, Wesolowski & Doubleday, (1991) similarly encourage verbalising or writing a plan of behaviour before and during execution of tasks with the addition of suggestions for fading such overt verbalisation. Burke, and colleagues (1991) used a multiple baseline, single systems design across specific tasks representing executive functions in four subjects. Each subject required individualised treatment, such as checklists or cueing for self initiation, to affect performance on specified tasks. One criticism often directed at this approach is that treatment effects or outcomes have poor generalisation to other tasks, or situations. Bogan (1991, p33) disagrees. He argues that by giving an overall plan, including "strategy training as one component, generalisation from one activity to another is more likely to occur - an
outcome which is missing in more traditional strategy training approaches".
Specific attempts must be made, however, to train for generalisation. This can be achieved in part by repetition and cueing the client to ‘remember’ to use the strategy. By training in the use of compensatory planning strategies, and modifying the environment to support the client’s use of these strategies, the structure, albeit external, is provided for clients to learn and follow more appropriate routines. That is, it is acknowledged that many individuals with impaired executive function may need lifelong support and modified environments, to plan and complete daily or novel tasks. Providing skills in use of strategies and modifying environments can assist clients to achieve these tasks within their individual circumstances. Evaluating program outcomes then, should also take place within this context, that is, with individuals in the environment in which the program takes place. Goal attainment scaling is flexible and appropriate for use in such circumstances.

Outcome evaluation literature and essential elements of the theory behind the planning program have been presented here. This is in preparation for describing the participant, the program itself and the procedure used for goal attainment scaling in the following section. The advantages and disadvantages of goal attainment scaling as a method to evaluate the current application of the planning program will be further addressed in the discussion.
3.0 THE EVALUATION

3.1 Participant

J is an 8 year old, left handed boy, who sustained a significant closed head injury with loss of consciousness on 1-7-90, after colliding with a trampoline while riding a four wheeled motorbike. Although not measured at the time of his admission to the local hospital, the length of Post Traumatic Amnesia (PTA), appeared to be approximately three days, according to his neuropsychologist. By international measures (Jennet, 1976), this indicates J sustained a severe brain injury. He had a left lateral rectus muscle palsy with associated double vision and the suggestion of a fractured skull (the frontal bone).

Eighteen months after his injury, J's parents reported their concern about J's continuing headaches, tiredness, increased emotional sensitivity, need for frequent reassurance, difficulty with concentration and poor memory. Progress at school was of emerging concern, despite average intelligence and average to above average effort. His neurosurgeon referred J to the Paediatric Team at Westmead Hospital. On assessment by a neuropsychologist, J's memory, new learning, speed of information processing and abstract reasoning were found to be impaired. Overall, higher cognitive skills were described to be subtly disrupted in development, affecting learning performance.

A more recent neuropsychological assessment indicated excellent reading comprehension, but with poor reading rate and accuracy. He had failed to build his verbal skills (such as abstract reasoning), demonstrated slow speed of responding and of information processing, and difficulty remembering what he had learned after a brief delay. J's school performance supported the evidence that his higher cognitive skills were falling further behind those of his peers, a phenomenon observed in many children injured at an early age (Haarbauer-Krupa, et al, in Ylvisaker, (ed), 1985).

J was also recently reviewed by the Paediatric Rehabilitation Team at Westmead Hospital, where his mother reported her concern about J's "difficulty occupying
himself, reluctance to try new activities" and long periods spent watching television and in video games. She also noted his impulsivity and "disorganised" approach during activities at home. J tended to rush into activities "like a bull at a gate". He would often appear "clumsy" despite normal coordination, would make many errors, left unchecked, and "give up easily" during activities. Nevertheless, during recent participation in a reading tutor program, J had demonstrated that he could learn strategies for checking and correcting his reading errors, when the instructor utilised a structured approach, small steps, additional repetition and reinforcement. With this in mind, the Paediatric Rehabilitation Specialist referred J to his case monitor and the author for participation in the Planning Program.

Social Situation: J lives with his mother, father and older brother on a small property on the outskirts of metropolitan Sydney. At the time of the program he was in Year 2 at his local primary school.

Play/Leisure Interests: There are few children his age living nearby, so J mainly plays with his mother or his brother ("A") - who is one year older, excels at schoolwork and at sports. J enjoys free drawing and copying pictures, playing video games, watching television, riding his trail bike and swimming. He also keeps several pets, including birds and a dog.

J's strengths were described thus: colouring in, drawing, sport and a "caring attitude towards others".

3.2 The Planning Program - A Description

Background to the Program

The "Planning Program" is an individualised, home-based program developed by the Paediatric Brain Injury Outreach Team, Westmead Hospital. The need for the program arose because of the reported difficulties experienced by children after head injury in one or more areas of executive function, particularly in planning and organisation during routine and novel tasks. Such reports came from parents, neuropsychologists and teachers, and rarely, from children themselves, and are
supported by the literature on paediatric brain injury (Lezak, 1983; Anderson, 1992).

The aim of the program is for the child to learn simple ways to compensate for problems in planning and organisation and to apply these during relevant activities of daily living at home.

It uses a compensatory approach, teaching the child simple planning and organisational strategies for completing routine and novel tasks. It does not aim to restore executive function, where executive dysfunction exists, but to assist the child to plan and carry out everyday activities as well as non-routine activities, within a supportive environment. Much use is made of environmental modification to facilitate use of these strategies and to provide a framework within which planning can take place.

In education, the importance of learning the process (or the "how") to learn a concept or a skill, as well as the content, is now realised. Moreover, the importance of students' awareness of their cognitive processing, rather than simply being rewarded for a correct response, is also espoused in the education and learning disabilities literature (Brown, Armbruster & Baker, cited in Orasanu, 1986). The Planning Program is based on the work of Australian educationalists, Ashman and Conway (1989), called Process Based Instruction ("PBI"), and is supported by that of Soh1berg & Mateer (1989) and Light, Neumann, Lewis, Morecki-Obert, Asarnow & Satz (1987). Their model for classroom use of Process Based Instruction is outlined in Appendix 1.

Stages of the Planning Program
J's Planning Program operated through four main stages, common to most therapy programs:

1. Assessment and Goal Setting.
2. Intervention.
4. Follow up.
The assessment stage commenced with J's and his parents' permission, to determine potential problem areas in planning and organisation, suitability for teaching compensatory strategies and willingness to participate (see Appendix 2). Assessment included: The Parent Interview - Executive Functions (see Appendix 3); review of referral information, medical, neuropsychological and therapy reports; completion of the Self Perception Profile for Children (child and parent rated profiles) (Harter, 1985); observations of the child during interviews and in familiar tasks; and discussion between program therapists.

The Parent Interview - Executive Functions is a semi-structured interview developed within the Paediatric Brain Injury Outreach Team to document examples of the difficulties the child experienced with executive skills at home. The emphasis is on encouraging parents to give actual examples of difficulties and the kind of help/support needed by the child in activities of daily living. Areas of executive function included in the interview are self awareness, goal selection, drive, motivation and initiation, monitoring of behaviour (inhibition, detecting and correcting errors), reasoning ("integration"), planning and sequencing. Information on the child's strengths and weaknesses in executive function from the parents' perspective is gained so that strategies based on these can be incorporated into the program. The interview was modified to include questions and examples relevant to J's developmental age. For example, in the area of planning, the following examples were given:

* To what extent is J able to - make a birthday card?
  - gather the equipment/gear he needs for riding his trail bike (without help)?
  - feed his pet animals?

* What sort of help does he need with these activities?
* Does he waste time looking for the same things he has previously misplaced? To what extent?
* When compared to J's brother, "A", does J set about familiar activities in an organised or logical way, e.g. in bike riding, feeding his pets, during
familiar games?

* At what point does J usually get stuck or give up on tasks he finds difficult?

The Self Perception Profile for Children (Harter, 1985) is valuable to assess the child’s self awareness of strengths and weaknesses and, indirectly, their self esteem, likes and dislikes. This also proves useful when choosing activities for making plans. J’s profile is summarised in Appendix 4.

Feedback from the assessments was provided to J and his parents in a non-threatening manner, allowing J to participate in the discussion, goal setting and program planning. This feedback is summarised in Appendix 5. Goal setting and construction of the Goal Attainment Scale (see Appendix 6) will be further discussed in the evaluation section following.

Planning the intervention also involved discussions between the two program therapists and the evaluation supervisor to ensure program evaluability and to incorporate evaluation activities throughout. Evaluation procedures will be described in the next section.

A signed consent form for J and his brother, A to be video-taped and photographed during therapy was obtained with cooperation from both children and their mother (see Appendix 7).

The Intervention stage broadly followed Ashman & Conway’s (1989) Process Based Instruction model, outlined in Appendix 1, and unfolded according to established principles of paediatric cognitive rehabilitation long term after brain injury. Standard learning principles and behaviour modification techniques were also employed throughout.

An overview of the Planning Program was first given to help J’s parents understand their roles and time commitments, and to clarify issues arising from this (see Appendix 8).
With the addition of strategies to develop a more structured home environment for J, therapy involved guided planning activities and set "homework" tasks between sessions. A schedule of program activities is outlined in Appendix 9, and a program diary outlining J and his family's responses to activities outlined in Appendix 10.

Eight sessions, each 1-2 hours, were conducted twice weekly at J's home. In this way, the momentum of the program could be maintained as the school year drew to an end. It also provided more frequent learning opportunities, close monitoring and early feedback throughout the program.

Other intervention occurring at the time of the program was minimal. This intervention included routine case monitoring in which concurrent school issues and implications of the recent neuropsychological assessment were discussed with J's parents.

All phases of the program were carried out at J's home, some 40kms from Westmead Hospital. Sessions were carried out in the afternoons, soon after J arrived home from school. His mother, on extended leave from work, was present at each session, participating in most of the activities. Some sessions were also attended by J's father and brother, with some activities involving a specific role for other family members. The program was delivered over a total of almost three months, the first of which included assessments, goal setting and treatment planning to individualise J's program.

Two therapists on the Paediatric Brain Injury Outreach Team (the author and J's "case monitor") carried out the assessments, intervention and follow up stages. The program evaluation supervisor was consulted during treatment planning and planning and implementation of the program evaluation. The supervisor also visited J's home with the therapists to develop and score the Goal Attainment Scale.

In the review and feedback stage J's weekly timetables (see Appendix 11a), written
plans (see Appendix 11b) and photograph sequences ("photoplans") were gathered for review. Progress made in specific areas was discussed, along with ideas for carryover beyond the therapy sessions. These ideas or hints are presented in Appendix 12, entitled "Hints on Further Helping J with Planning". Formal scoring of the Goal Attainment Scale occurred in this stage.

The follow up stage occurred some two months later, after the school holidays and when J returned to a more stable routine. This involved re-establishing a broad daily and weekly routine through the use of a whiteboard J’s parents purchased for his use, checking progress with carryover activities and monitoring progress thereafter during routine case monitoring.
3.3 Method
The main method of program evaluation was through Goal Attainment Scaling described below. Prior to this, program expectations were clarified for the therapists and family and formal approval for the evaluation sought.

Clarifying Program Expectations
Following the initial assessment stage, some clarification was required of the main question under study and expectations for J's program. Without prior experience of the program, or necessarily an understanding of the implications of J's executive and learning problems in everyday planning and organisation, J and his parents were not immediately involved in planning his program evaluation. Instead, initial input was sought from the program evaluation supervisor to clarify program expectations and program evaluable. Broad goal areas were developed from this consultation for J's Planning Program (see Appendix 13).

From previous experience implementing the Planning Program, and from the brain injury rehabilitation literature, it was clear that J's developmental level and expectations for him at home were crucial to program expectations. At eight years old, J was not expected to have fully mature awareness of his limitations, metacognitive awareness for abstract concepts such as planning, nor have full potential for learning compensatory strategies (Haarbauer-Krupa, Henry, Szekeres & Ylvisaker, cited in Ylvisaker (ed), 1985). He was not expected to demonstrate planning skills consistently, although some evidence exists that adult level executive function is possible at age 10-12 years (Anderson, 1992), and that many younger children also show flexibility in strategic behaviour and problem solving. Planning is a learned process, built up over time. For children with damage to the frontal brain lobes, or systems, where regulation of planning and problem solving occurs, full planning abilities may never emerge. Compensatory strategies for planning and organisation, where damage to these areas is apparent, provide some assistance for daily functioning in well structured environments (Roberts, 1992).

Approval for the Evaluation
Formal approval to conduct an evaluation of J's program was granted by the Head
of Paediatric Rehabilitation, Westmead Hospital, under whose care J's long term rehabilitation care is supervised. Approval was also granted by the Team Leader in the Paediatric Brain Injury Outreach Team and the Head of Department in Occupational Therapy. As J’s program was conducted in the regular work context, hospital and university ethics committee approval was not required. Evaluation in this context is encouraged from all therapists providing therapy programs.

Written consent for the evaluation was obtained from J’s parents prior to joint goal setting, and following explanation of the process and roles of those involved. The evaluation information sheet is attached in Appendix 14, and the format for the consent form attached in Appendix 15.

3.3.1 Construction of the Goal Attainment Scale

Family Input
In recognition of the benefits of client participation in the process of formulating individualised program goals (Kiresuk & Lund, in Schulberg & Baker, 1979), input was sought from J and his family to develop program goals. J's family was requested to consider their overall hopes for J's program at a home visit prior to formal goal setting.

J's mother responded immediately with suggestions, while remaining family members awaited the formal goal setting session. J's willingness to participate in the program and program evaluation was now well established.

Panel Discussion
Initial family responses and therapists' ideas were presented to the program evaluation supervisor, an "expert" in the use of goal attainment scaling locally. This meeting was to further develop initial ideas for program goals and for the goal attainment scale, which were believed to be achievable for J and his family in the time available. Broad therapy goal areas were operationalised in preparation for the formal goal setting session.
Formal Goal Setting

A home visit was then carried out by the therapists and the evaluation supervisor to further discuss the program evaluation and to set specific goals for J’s planning program in the light of feedback from assessments and earlier consultations.

Feedback from the assessment stage was first presented to J and his family. This is summarised in Appendix 10. Discussion followed relating to his parents’ general perception of J’s problems as "poor motivation and laziness", rather than difficulties in planning and other executive skills. These differences were pointed out and J’s problems reframed so that his family could focus on goals for his program. Family goals, initially expressed in non-measurable terms, such as "to 'have a go' at tasks", were made more operational, as summarised in Appendix 16.

Following this visit, the Goal Attainment Scale (Appendix 6) was completed and refined by the author, with assistance from the program evaluation supervisor, according to procedures intended by the original authors (Kiresuk & Sherman, 1968). Broad goal areas, listed at the top of the Goal Attainment Scale were:

1. Development of a written weekly timetable for J.
2. Adherence to (completion of) before and after school routines.
3. Regularly feeding the dog.
4. Use of free time and making activity choices.
5. Ability to make a plan.
6. Ability to follow a self-made plan.

Goal areas were then weighted according to their importance, relative to each other, as is suggested by Clark & Caudrey (1983, p43).

The possible outcomes (behaviours) and indicators for their measurement were devised, by estimation of what could be reasonably expected as a result of the planning program (intervention). Factors taken into account were the nature of each problem area, resources and time available for the program, previous
experience of the program with other children, and parental expectations for J’s behaviour at home. Stating these in concrete behavioural terms assists in measurement and recognition of their achievement during later scoring (Clark & Caudrey, 1983, p.42). Outcomes were arranged on a 5 point continuum ranging from better than expected to worse than expected.

Finally, an estimate of the time for final evaluation (Goal Attainment Scale scoring) was made, as is accepted procedure (Clark & Caudrey, 1983). To reduce the likelihood of interference from extraneous factors, this date was set as close as possible to the end of the intervention stage, but prior to the program follow up stage, which occurred after the school holidays.

One day after completing the intervention, a home visit was conducted by the author and the program evaluation supervisor to score the Goal Attainment Scale and obtain general feedback on the program from J and his family, via an interview/discussion. These were conducted by the program evaluation supervisor who was independent of the therapy program provided, to improve objectivity for scoring.

J, his mother and the author also participated in scoring the Goal Attainment Scale. Scores were obtained directly from some of the program materials such as J’s completed weekly timetables, and written plans, and from therapists documentation of J’s progress throughout the program. J’s mother was able to confirm these measurements, based on her memory of J’s performance, since she was involved in all aspects of the program.

The program evaluation supervisor conducted the interview/discussion with J and his mother with responses immediately documented. The interview transcript is included in Appendix 17. J attended for periods throughout the scoring and interview. The information from the interview, while based mainly on J’s mother’s opinion, complemented Goal Attainment Scaling, particularly because of it’s informal approach and it’s ability to elicit a wide range of parental perceptions about the program.
3.3.2 Data Collection and Data Analysis

During the visit above, the author documented directly onto the Goal Attainment Scale, the level of goal attainment \( J \) obtained for each goal statement, as agreed between program participants, program evaluation supervisor and the author.

Using the five point performance scale (from -2 to +2), and goal weights previously established, the goal attainment score was computed using the formula as follows:

\[
T = 50 + \frac{10\sum W_i X_i}{(1 - p)\sum W_i^2 + p(\sum W_i)^2}
\]

where:

- \( p = 0.3 \), a set or assumed value, the average intercorrelation between outcome scores,
- \( W_i \) is the weight assigned to the \( i \)th goal,
- \( X_i \) is the outcome score (-2 to +2) for the \( i \)th goal, and
- \( T \) is a standardised overall goal attainment score, with a mean of 50 and a standard deviation of 10.

(Kiresuk & Sherman, 1968)

A \( T \) score of 50 corresponds to the expected level of performance. A \( T \) score of more than 50 reflects an outcome which is more than the expected level of success (or goal attainment), and a \( T \) score of less than 50 reflects performance below the expected level, being an unfavourable outcome.
4.0 RESULTS

In Goal Attainment Scaling, a scoring procedure can be used to produce a standardised score to gauge effectiveness of the intervention. The same procedure is used for all goals across individuals or therapy groups so they are comparable.

Data for the goals of J's planning program are presented in Table 1.

**TABLE 1**

<table>
<thead>
<tr>
<th>Goal No.</th>
<th>Goal Area</th>
<th>Weight ((W_i))</th>
<th>Outcome ((X_i))</th>
<th>(W_iX_i)</th>
<th>(W_i^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Weekly timetable</td>
<td>2</td>
<td>+2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Routine</td>
<td>3</td>
<td>+2</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>Feed dog</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Free time/choices</td>
<td>3</td>
<td>+1</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>Make a plan</td>
<td>2</td>
<td>+1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Follow a plan</td>
<td>2</td>
<td>+1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL:</strong></td>
<td></td>
<td><strong>14</strong></td>
<td><strong>7</strong></td>
<td><strong>17</strong></td>
<td><strong>34</strong></td>
</tr>
</tbody>
</table>

The method originally proposed by Kiresuk & Sherman (1968) and described in the formula presented in the previous section, was used to calculate the standardised T score. When information from Table 1 was substituted into the formula, the T value was 68.70. This is a weighted average of the goals changed into a single score, with a mean of 50 and a standard deviation of 10, assuming the T scores belong to a normal distribution (Clark & Caudrey, 1983, p43).

The goal of the planning program was therefore met since the overall goal attainment score was above 50 (Kiresuk & Sherman, 1968). The overall outcome
of J's planning program with account taken of the weight given to each goal, can be said to be better than the expected level of success.

Results for each goal area is presented in order by goal weight as follows:

**Goal Area No. 2: Adherence to Before and After School Routine (Weight = 3).**

In this goal area, J's before school routine included getting dressed and cleaning teeth. J's after school routine was defined as putting his empty lunch box on the kitchen bench and getting changed from his school clothes. Weekend routine activities were also included in the 5 point scale including getting dressed and cleaning teeth.

At the end of the program, J completed all (4/4) of the routine activities on his timetable over five consecutive school days, and 2/2 of the routine activities over two weekends. These results were readily obtained from J's previous weekly timetables, which he and his parents had checked off on completion each day. J found this goal somewhat easy to achieve at the "most favourable outcome likely", or +2 level, having achieved it at the end of the first two weeks of the program. However J's parents reported that early in the program, J required more frequent reminders to check his timetable, than towards the end of the intervention, when he also adhered to his routine activities. J's ability to adhere to his routine with fewer reminders during the program was therefore observed by his parents, but this aspect was not included in the goal attainment scale.

**Goal Area No. 4: Making Use of Free Time and Making Choices (Weight = 3).**

At evaluation, J could select and do two activities each day where choices were given in his written weekly timetable, choosing at least one activity other than "Sega" (video games) or TV. This represents a greater than expected outcome (+1).

J or his mother noted the activities he chose at each "free time" space on his
timetable. This was specifically to monitor the kinds of activities J could do when choosing independently, as his parents had previously expressed concern that J would spend most of his free time watching TV, playing video games, "pestering" his mother to take him on outings, or claiming boredom.

The activities J chose were generally included on his lists of indoor and outdoor play activities, made jointly with J during the program. Had this list been less exhaustive, J may have had more opportunities to choose an activity not on his list (the outcome defined as most favourable).

**Goal Area No. 1: Weekly Timetable (Weight = 2).**

At evaluation, J had helped to develop his written weekly timetable three out of three weeks, develop a loose written holiday plan and had indicated his intention to continue a simple timetable upon his return to school after the holidays. This is a most favourable outcome (+2) for this goal.

From therapists' observations during the program, J had some difficulty maintaining attention to the task when developing his weekly timetables. He quickly learned to verbalise his daily routine activities and soon preferred that these were not written specifically on his timetable. Other routine activities, such as his "Little Athletics" club night and trail bike club days (Sundays) were more difficult for J to remember to include when making his timetable.

Choosing activities for play times was also quite tedious at times for J. He often became restless when unable to think of activities to include. At these times, J's mother was generally able to prompt J appropriately, without diminishing his freedom to choose.

J took some time to learn to use (read) his timetable, finding the rows and columns hard to follow. Specific strategies were developed for J to learn this skill, including symbol/picture cues and practice exercises. He required help first from the therapists (modelling for his mother), then from his mother to complete each timetable. J's mother commented on the time-consuming nature of this
activity in the evaluation interview (Appendix 17).

In contrast, the aim of developing a "loose" joint plan for J's family holiday, was to encourage J and his family to see the value in making plans together, and to reinforce J's planning skills, with the additional requirement to consider others' needs when planning. According to J's mother, this was a satisfying activity for J and the family, despite her earlier concern that their holiday options would be limited by the plan. The concepts that plans must be flexible and realistic were also reinforced in this activity.

J and his mother indicated their intention to continue a simple timetable for J following his return to school. The form that this would take was briefly discussed with J's mother at evaluation. J agreed to use at least a monthly calendar, and his whiteboard for reminders. The use of a weekly timetable as well was encouraged, and was discussed further at the follow up stage.

**Goal Area No. 3: Feeding the Dog (Weight = 2).**

J had attained the expected outcome for this goal at the end of the program. That is, he had fed the dog 5 out of 7 days for two consecutive weeks (Score = 0).

During the program, J's performance in this area suddenly deteriorated, with J refusing to complete the whole task. When asked about his refusal, J claimed he did not wish to collect the dog's bowl when it was taken (by the dog) far away from the house. He was convinced by his mother and therapists to compromise and feed the dog at least every second day, with which he complied regularly until the following week. At this point J again resumed feeding the dog daily, stating that he felt that he carried out the task "better than" any other family member. Thus, overall, J did not feed the dog daily for two consecutive weeks, but after discussion during the evaluation, it was felt that J had attained an equivalent level on this goal, having maintained a level higher than a score of -1. Inclusion of the word "consecutive" in this case reduced the measurability of possible outcomes described.
Goal Area No. 5: Making a Plan (Weight = 2).

At the end of the program, J had attained a greater than expected outcome (+1) on this goal. He was able to list five of the five steps in the "step guide", with verbal cues to list the specific actions or activities within four of five steps. J had demonstrated this level of attainment during the final program sessions, but under pressure on the day of evaluation, required some prompting to recall two of the five steps in the step guide. Again, after discussion about J's true level of goal attainment, a score of +1 was given.

During the program, J was sufficiently able to learn the steps to make a plan, but required help to consider specific actions or methods within each step. He tried writing then drawing his plans using the step guide, but became easily frustrated with his own drawings. He preferred his mother to act as scribe while he stated the activities in each step. This enabled the plan to be written in J's own language, but reduced the time needed for J to write, a skill J found especially hard. The "step guide" is a structured guide for planning tasks. It includes the following cues or steps:

<table>
<thead>
<tr>
<th>My plan for.................</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do I need?</td>
</tr>
<tr>
<td>Beginning step</td>
</tr>
<tr>
<td>Middle steps</td>
</tr>
<tr>
<td>End step</td>
</tr>
<tr>
<td>Check.</td>
</tr>
</tbody>
</table>

Goal Area No. 6: Following A Plan (Weight = 2).

In this goal area, J also attained a greater than expected outcome (+1). He followed his plan to carry out two activities without cues, when "plan" referred to his timetable. When "plan" referred to a plan that J made for an activity during the program, J actually attained a less than expected outcome (-1). Since the goal attainment scale defined "plan" as either his timetable or a plan J makes, a score of +1 was agreed as acceptable. More, or alternative methods of instruction may
be required for J to improve in following his own plan. Less positively, J may continue to be dependent on cues (or reminders from others) to follow his plans. This may warrant further investigation. When a score of -1 for this goal was substituted into the goal attainment formula, the overall T score became 64.30, still well above the expected level of overall goal attainment.

Once learned, J found following his timetable easier than following his written plan for an activity. He tended, as predicted by his parents, to rush into the activity with a good general idea of what he was doing, step by step, but frequently forgot to check his plan for details until prompted to do so. At the end of the program, J remained dependent on verbal cues or prompts to check his plan at points throughout the activity, although he demonstrated a good understanding of the general plan itself. The steps J did not check were not typically those involving personal safety, but tended to impact on the quality or quantity of the end product, such as over-feeding the chickens or under-filling their water bowl.

Each goal was achieved to some degree, with specific planning skills reaching lower levels of attainment (+1) than other organisational or environmental goal areas (+2). With more time and alternative approaches to instruction, J may have achieved better outcomes in these areas.

In examining the parent interview (Appendix 17), also carried out at the evaluation session, it appears that J’s mother felt that J made progress in some areas, while feeling cautiously optimistic about longer term outcomes of the program. It was clear at this point that follow up activities would be required to ensure that J maintained proficiency in use of his own timetable and in carrying out the associated activities routinely. A timetable written on his whiteboard may reduce time spent in this process. To develop skills in using a yearly calendar, J would require specific instruction and regular monitoring. Further investigation and discussion of suitable rewards for J in these activities is also warranted.
5.0 DISCUSSION

Cognitive rehabilitation may be thought of as a set of therapy methods to retrain or alleviate (compensate for) deficits in attention, concentration, visual processing, language, memory, reasoning, problem solving and executive functions. These must be based on theories of cognitive rehabilitation, and must define treatment goals with specific components and behaviours targeted and outcomes sought.

In the late phase of recovery after brain injury, the focus is on increasing the child's independence and adaptability, by withdrawing or modifying previously placed environmental supports, training practical skills in more natural settings, and equipping the child with strategies to compensate for long term problems (Szekeres, Ylvisaker & Holland in Ylvisaker (Ed), 1985). These phases can occur at different times after injury for different children and depend on the nature and extent of brain injury. They do not necessarily correspond with physical recovery.

Compensatory strategies for a child with a difficulty in task organisation may be, for example, for the child to develop and use ordered checklists like the step guide, including materials, sequenced steps, a time line, check steps for each when completed and cueing to make any adjustments needed.

In many cases, environmental modifications are required in the long term. Environmental compensations may involve altering the physical environment or the child's routine, providing the child with extra supervision, simplifying the amount, rate and complexity of information during interactions with the child and altering one's behavioural expectations of the child to a more realistic level. Other examples are the use of a notepad, personal or student diary, checklists, calendars, alarm clocks and pre-written guides or plans.

There is much debate about the efficacy of cognitive interventions claiming to retrain executive functions. In a presidential address, Roberts (1992, p52) claimed that it may not be feasible to expect genuine restoration of executive function, but rather interventions may simply succeed in producing more acceptable "but
equally well-learned routines”. It is with generalisation of skills trained and the mechanism for this that researchers have most concern (Lawson & Rice, 1989).

It is proposed that more generalised metacognitive instruction such as that of Ashman & Conway’s Process Based Instruction, (1989) is needed in training procedures to assist in transfer of training to real life use of strategies by children when they are required. For example, according to Brown, Campione and Day (1981, cited in Bouchard-Ryan, Short & Weed, 1986), in self control training, specific metacognitive training is provided simultaneously with the strategies taught - that is training in planning, checking and monitoring. The metacognitive components are not necessarily specific to the target task (such as reading), but rather constitute a general strategy for approaching any problem solving situation. Therein lies its potential for generalising to other tasks and problems.

The developing of plans for problem solving is at the core of this method. Students learn how to attack problems and how to work cooperatively with others to solve them. Children are given responsibility for more of their own learning by developing and using their own plans and coding strategies to work on projects and problems. A step by step approach to each problem or task is encouraged.

In summary then, there is a dearth of empirical evidence to support the restoration of higher cerebral functions, such as executive functions, through current cognitive retraining methods (Webb, 1991). There is, however cautious optimism regarding the ability to improve children’s attentional, general planning and problem solving abilities and improve real life functioning via systematic, process based interventions. These interventions may amount to the successful application of compensatory strategies. Learning the process to complete an activity or solve a problem via cognitive plans is one such intervention.

In contrast with adults, well controlled outcome research studies of children with traumatic brain injury are virtually nonexistent, as are cognitive rehabilitation programs designed specifically for children. Moreover, there are few specific and reliable measures of the attentional, executive and memory functions compromised
by head injury. Intelligence tests do not adequately measure these functions and, in any case, intelligence long term after brain injury often returns to the average range, despite other obvious impairments. Vocational success proposed as a measure of outcome with adults is said to be sensitive to executive dysfunction, but would require longitudinal studies lasting many years, in the case of children like J, injured very early in life.

Light, et al (1987, p21), suggests that

"many clinicians in rehabilitation conclude that the most relevant and clinically important outcome variables are measures of adaptive functioning for real life tasks, since it is these factors that most directly affect an individual’s quality of life”.

These factors argue Lezak (1988), also most affect the quality of life of their families.

The state of research into the efficacy of cognitive rehabilitation is in its infancy. The challenge to researchers is not simply its effectiveness per se, but to determine which types of cognitive rehabilitation methods are most effective, the optimum time to provide them for individuals with different types of cognitive impairments, and what outcomes reflect relevant improvements in quality of life for the child, their family and the wider community. Further research and documentation of approaches currently in use for the late stage rehabilitation of executive functions in children is warranted. Outcome measures need to be specific and measurable in real life situations.

Goal attainment scaling has been put forward here as a useful method of program evaluation in an individualised program employing cognitive rehabilitation principles. The primary method of evaluation employed for J’s "Planning Program" was goal attainment scaling, following accepted procedures. This was complemented with a parent interview providing an opportunity for J’s parents to share informally their overall impressions and to further discuss ideas for carryover of therapy gains.
The results of J’s program evaluation were pleasing, with an overall (standardised) goal attainment score of 68.70. This score, above 50, indicated overall success in meeting program goals. More specifically, all six goals were attained at the expected level or at better than the expected level of success. Goal attainment scaling gave information on program impact (or outcome) overall, and about each goal area.

Of the six goals, two achieved a most favourable outcome, three were better than that expected and one achieved the expected level of attainment. One goal area (Goal 6 - Following a plan), resulted in two levels of attainment on scoring, because alternative behaviours, were permitted, in the definition of "plan" during construction of the scale. In this goal, the two outcomes were conflicting - one less than the expected and one better than expected. Although this could be perceived as a weakness in scale construction, it was felt that both behaviours reflect the goal of concern, and so either was acceptable during scoring. Even when the lower score (-1) was substituted into the general attainment formula, the T score obtained (64.30) was still well above 50, indicating overall achievement of program goals above the expected level. This highlights the importance of the goal construction process in this method of evaluation. Possible outcomes must be clearly expressed as objective, observable (measurable) behaviours.

Another question raised from these results is the possibility that the therapists under-estimated the level at which J entered the program, or the level at which he could be reasonably expected to attain following the intervention (Cusick, in press). The use of input from J’s family, other health professionals (neuropsychologist’s report, program co-therapist) and an expert in goal attainment scaling during the development of the scale goes some way towards ensuring accuracy in these estimations and confidence in the results reported.

Some of the advantages and limitations of goal attainment scaling have been illustrated in applying goal attainment scaling to evaluate J’s program. Mutual goal setting, while not mandatory in the goal attainment scaling procedure, can assist clients (especially those with poor self awareness or self monitoring skills)
to understand and work toward goals that are realistic and relevant to their circumstances. When goals are expressed clearly and simply on the scale, clients (including young children) and their families, can focus attention on the target, facilitating action towards it (Davis, 1973, cited in Kiresuk & Lund, 1979). This also makes abstract concepts and goals, such as planning, more concrete.

Goal attainment scaling gives concrete feedback on progress, both during and after the intervention, depending on the time chosen for evaluation (and scoring). Malec, et al (1991), suggested re-evaluating goal attainment regularly rather than only at program completion. This, they argued, assists with treatment planning, team management and communication. During program implementation, J participated only in his routine reading and spelling sessions with his mother and in routine case monitoring by one of the program therapists. The latter consisted of discussions on school issues as they arose throughout the course of the program. Regular re-evaluation of goal attainment was not therefore required for team purposes. Moreover, since the possible outcomes are clearly stated on the goal attainment scale, and daily monitoring of these behaviours occurred during the program, formal, regular re-evaluation of goal attainment was not necessary.

On this point, J and his family were required to monitor (check, document and reward) J’s daily performance of planned tasks, specifically because of J’s' weaknesses in the areas of self evaluation and self monitoring abilities, assessed prior. These problem areas were thought to impact to some degree on J’s planning skills and performance in planning tasks. The work of Haarbauer-Krupa, et al (1985), Harrell & O’Hara (1991), and Ylvisaker & Szekeres (1989) is illuminative in the areas of self awareness and self monitoring. Poor self awareness is considered a barrier to participation in rehabilitation, particularly cognitive rehabilitation. By involving J and his family in goal setting, monitoring and evaluating attainment of their goals in the goal attainment scaling process, this issue was partly addressed. The use of videotaped activities and photoplans, also provided direct, honest feedback about J’s behaviours and performance.
Although J may not have a full appreciation of his cognitive and learning difficulties, having the skills (strategies), motivation and expectation to perform certain tasks or behaviours (such as feeding the dog, or choosing a play activity after school) can assist in the attainment of program goals.

Goal attainment scaling is a flexible method of outcome evaluation, highly suitable for use in the child’s home. The home is arguably the most relevant setting for paediatric rehabilitation in the late stage of recovery after brain injury, where families are the child’s main carers, models and source of support. Its simple, yet precise procedure is easily presented in an informal manner.

Measures in the goal attainment scale are tailored to the client’s particular needs and, therefore also tailored to the program/interventions used (assuming that therapy is individualised). Thus, program planning is simplified and therapy can be made more relevant to individual clients.

For the therapists, goal attainment scaling presented a relatively simple method for evaluation. It assisted in communicating program goals and outcomes and in directing the content and process of therapy. Goals stated simply and objectively are of benefit to therapists and assist therapists to determine future problem areas. These can in turn be targeted for further therapy where appropriate. These features make this method attractive to therapists providing therapy programs for children, where communication with, and participation of the family is vital to program success.

Outcomes may be of prime concern to therapists and to funding sources. Reporting on programs evaluated using goal attainment scaling is straightforward because of its logical, structured approach and simple format for recording outcomes directly on the scale. The overall attainment score, being standardised, is a meaningful, numerical indicator of program effectiveness. Such information can support the legitimacy of individual therapy programs, and can go some way towards ensuring professional accountability (Ottenbacher, 1986).
Despite such advantages, the limitations of goal attainment scaling, some of which emerged during this application, must also be presented.

Seaberg & Gillespie (1977), point out that, compared to other devices for measuring treatment outcome, goal attainment scaling has low construct and concurrent validity. Others (Garwick, 1974, cited in Seaberg & Gillespie, 1977; Ottenbacher & Cusick, 1993), argue that goal attainment scores are not intended to have high correlation with other measures, since it measures goal attainment as outcome, not constructs specific to any particular problem or program type. Goal attainment scaling was not developed as a traditional research methodology. It does not attempt to establish causal inferences between variables, nor discriminate between clients based on set norms of behaviour or development. Instead it assists in the assessment of client change over time, towards established individualised goals. This enables goal attainment scaling to be applied across a wide range of settings, but not to generalise to other populations or settings. If goal attainment scaling is used in traditional research designs, this is clearly a limitation and other procedures must be followed, for example, random allocation of clients to treatment groups, and blind recording of outcomes (Lewis, Spencer, Haas & DiVittis, 1987).

Other conceptual and psychometric problems, according to Seaberg & Gillespie (1977, p6), arise from the same confusion over the 1) ambiguous (sic) meaning of goal attainment scaling; 2) prediction statement problems, such as who states, and how goals are stated. These reflect on reliability of the predictions made by different goal setters; 3) computational problems, including unspecified criteria for estimating the "importance" of goals to assign goal weights; and the use of equal interval numbers on the five point continuum of outcomes, when the behaviours described are not necessarily "equidistant", and 4) evaluation design problems. For example, there may be tendency to make causal inferences about the absolute effectiveness of the program or treatment because change may infer causality. For such inferences to be made, however, designs must use a non-treatment comparison, such as in single system or multiple baseline designs. Alternative hypotheses for change must also be examined, such as external events occurring
during intervention, maturation, and so on.

For the purpose of J’s program evaluation, it is possible to conclude that, at completion of the program, change occurred beyond expected levels on the goals relevant and important to J and his family. These results clearly cannot be generalised to other clients, nor can direct assumptions or inferences be made about causality. The supportive evidence (for change) from other measures, such as the parent interview, was also presented. Other discriminative measures, such as standardised tests of executive function or standardised functional outcome measures could have complemented the evaluation, with pre-program measurements of relevant indicators to assist with estimating J’s entry levels and expected outcomes on the goal attainment scale. Post program measures could then complement program evaluation outcomes obtained from goal attainment scaling. However, such instruments or measures, were they available at all, are rarely considered to detect the ‘real’ outcomes/changes occurring following cognitive rehabilitation interventions (Light, et al, 1987; Bogan, 1992).

In summary, the lack of psychometric precision and conceptual limitations of goal attainment scaling presented in the literature, mainly result from its other advantages such as its flexibility and individualised approach!

The use of clinical and evaluation ‘experts’, along with clients and their families during the evaluation process is recommended (among others) to improve the technical soundness of goal attainment scaling (Heavlin, Lee-Merrow, & Lewis, 1982). This has been heeded in the evaluation of J’s planning program. Further applications of this approach to program evaluation will enable other therapists to answer basic client and program outcome questions, such as whether change occurred and to what extent, or whether one or a combination of interventions works better for a specific client.

A systematic methodology has not generally been available to therapists for evaluating outcomes of treatment with the individual client in relevant environments. Goal attainment scaling as a methodology permits therapists to
REFERENCES


Appendices
### PBI CLASSROOM INTEGRATED MODEL

(Ashman & Conway, 1989, p155)

<table>
<thead>
<tr>
<th>INSTRUCTIONAL PHASE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ASSESSMENT</td>
<td>Determines levels of executive function and use of learning strategies.</td>
</tr>
<tr>
<td>2. ORIENTATION</td>
<td>Introduces the concept and use of plans.</td>
</tr>
<tr>
<td>3. STRATEGY DEVELOPMENT</td>
<td>Main teaching phase, as child learns to state, draw or write his/her own plans, using child’s own language; enact the plans and restate corrected plans.</td>
</tr>
<tr>
<td>4. INTRA-TASK TRANSFER</td>
<td>Plans are trialled on similar tasks, extending their application.</td>
</tr>
<tr>
<td>5. CONSOLIDATION &amp; GENERALISATION</td>
<td>Abbreviating plans, more general plans, coding skills, identifying other task applications, e.g. homework.</td>
</tr>
</tbody>
</table>
## STAGES OF THE PLANNING PROGRAM

### THE PLANNING PROGRAM

<table>
<thead>
<tr>
<th>Program Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Assessment and Goal Setting</td>
<td>* Referral information.</td>
</tr>
<tr>
<td></td>
<td>* Parent interviews.</td>
</tr>
<tr>
<td></td>
<td>* Information gathering from medical and therapy reports.</td>
</tr>
<tr>
<td></td>
<td>* Harter Self Perception Profile.</td>
</tr>
<tr>
<td></td>
<td>* Observations of the child.</td>
</tr>
<tr>
<td></td>
<td>* Provide feedback from assessments.</td>
</tr>
<tr>
<td></td>
<td>* Goal setting with the child and family.</td>
</tr>
<tr>
<td></td>
<td>* Construction of the Goal Attainment Scale.</td>
</tr>
<tr>
<td>2. Intervention</td>
<td>* Introduction/orientation to the program.</td>
</tr>
<tr>
<td></td>
<td>* Twice weekly sessions with child and parent/family:</td>
</tr>
<tr>
<td></td>
<td>- Introduction to planning and plans;</td>
</tr>
<tr>
<td></td>
<td>- Set up child’s weekly timetable/schedule;</td>
</tr>
<tr>
<td></td>
<td>- Review timetable at each session;</td>
</tr>
<tr>
<td></td>
<td>- Parents monitor and reward daily progress on timetable activities;</td>
</tr>
<tr>
<td></td>
<td>- Reduce complexity of timetable, as needed;</td>
</tr>
<tr>
<td></td>
<td>- Introduce limited choice, then free play times on timetable;</td>
</tr>
<tr>
<td></td>
<td>- Verbalise plans for familiar tasks;</td>
</tr>
<tr>
<td></td>
<td>- Write plans with help, using &quot;step guide&quot;;</td>
</tr>
<tr>
<td></td>
<td>- Follow plans to carry out tasks, with prompts to refer to plan;</td>
</tr>
<tr>
<td></td>
<td>- Videotape or photograph performance during tasks with plans;</td>
</tr>
<tr>
<td></td>
<td>- View video or photographs immediately after each activity;</td>
</tr>
<tr>
<td></td>
<td>- Structured sequencing activities using feedback from video/photos (make &quot;photoplans&quot;);</td>
</tr>
<tr>
<td></td>
<td>- Parents to assist with writing timetable and plans during or between sessions;</td>
</tr>
<tr>
<td></td>
<td>- Use of same plan for similar tasks (for generalisation);</td>
</tr>
<tr>
<td></td>
<td>- Write and use plans across a wider variety of tasks;</td>
</tr>
<tr>
<td></td>
<td>- Reduce prompts to refer to plan, but maintain written plans as needed.</td>
</tr>
<tr>
<td></td>
<td>* Monitor and discuss progress with child and parents throughout program intervention.</td>
</tr>
</tbody>
</table>
**THE PLANNING PROGRAM**

<table>
<thead>
<tr>
<th>Program Stage</th>
<th>Description</th>
</tr>
</thead>
</table>
| 3. Review and Feedback | * Gather and review timetables, written plans, photoplans and "framework" tasks, e.g. family holiday plan.  
* Discuss ideas for carryover beyond therapy sessions (including school holiday period).  
* Score using Goal Attainment Scale.  
* Parent Interview to discuss overall progress and immediate plans for carryover. |
* Case monitor to monitor progress and carryover activities. |
PARENT INTERVIEW

EXECUTIVE FUNCTIONS

This questionnaire is designed to elicit information about the child’s strengths/weaknesses, from the parents’ perspective, in the following areas of executive function:

1. Self Awareness
2. Goal Selection
3. Drive/Motivation (initiation)
5. Integration (reasoning)
6. Planning
7. Sequencing

Prepared by: Merryn Anderson
Speech Pathologist

Wendy Lewis
Clinical Nurse Consultant

PAEDIATRIC BRAIN INJURY OUTREACH TEAM
5 June, 1991
ADMINISTRATION

The questionnaire is divided into two sections.

1. The *initial questions* give a definition of the executive function and a few examples of difficulties in that area.

2. The *indepth questions* allow for more detailed assessment on specific difficulties a child may be experiencing in any of the areas of executive function examined.

* We have found it useful to read through the initial questions with the parent to identify potential executive functions to follow up with indepth questions. The parents may also benefit from having a copy of these pages in front of them.

* Ask the parent to indicate if they recognise any of the areas being applicable to their child.

* Next, go to the indepth questions for all areas other than those that are definitely not identified as a problem.

* Record the parents' responses, aiming to use their words as far as possible. It may also be useful to tape the interview.
INITIAL QUESTIONS

1. SELF AWARENESS
   * Being aware of own strengths and weaknesses; does he know the things he is good at and the things he is bad at, e.g. school subjects.

   Difficulties
   * e.g. - Comes home from school with mark of 20%, and doesn't grasp that he hasn't done well and therefore having trouble with that subject. Might realise strengths and weaknesses if pointed out.

2. GOAL SELECTION
   * Sets realistic aims in terms of time involved, ability, equipment.

   Difficulties
   * e.g. - Says he is going to do a major assignment/project in one night.
   * e.g. - Child who is failing at school says he wants to be a doctor.
   * e.g. - Child says he is going to save up and buy something that is totally beyond his reach financially.

3. DRIVE/MOTIVATION
   * Independently starts new activities; will spontaneously start a conversation.

   Difficulties
   * e.g. - Very quiet; will only speak when spoken to; needs someone to get him going.
   * e.g. - Can start everyday activities, e.g. getting up, brushing teeth etc, but has difficulty with anything new, e.g. packing to go away on weekend camping.
4. **MONITORING OF BEHAVIOUR**

* Says and does the right thing at the right time.
* Able to check his own progress with an activity as he is going along and make changes as needed, e.g. when child is explaining a game and he uses the wrong word or phrase he is able to stop himself or correct himself.

**Difficulties**

* e.g. - Interrupts conversations; speaks out of turn; talks a lot; demands attention; says the same thing over and over; not always appropriate in behaviour and speech with friends; behaviour can be annoying to the people around him.
* e.g. - Doesn’t realise when he is making mistakes.
* e.g. - May be unable to correct self even when the mistakes are pointed out.

5. **INTEGRATION/REASONING**

* Is able to put together different pieces of information to work out a problem.

**Difficulties**

* e.g. - Is very rigid in his way of thinking.
* e.g. - Is unable to cope with changes in routine.
* e.g. - Is he able to catch on to a joke?
* e.g. - Does he have difficulty understanding the storyline of films/TV shows?
6. **PLANNING**

* Approaches jobs/activities in an organised way.

**Difficulties**

* e.g. - Very impulsive, jumps into things without thinking first - like a bull at a gate.

* e.g. - Tidying room - has no system, e.g. vacuums before clearing the floor.

* e.g. - Wastes a lot of time looking for things.

* e.g. - Is often late.

7. **SEQUENCING**

* Is able to carry out a job with a number of steps to it in the right order.

* Is able to report the details of an event in correct order of occurrence.

**Difficulties**

* e.g. - Says things out of order/jumbles up a story.

* when washing the car, setting the table or writing a letter etc, tries to do the third step first.
INDEPTH QUESTIONS

1. **SELF AWARENESS**

* Can you describe the problems he has with being aware of his own strengths and weaknesses? Give examples.

* Can he:
  - predict how well he will do on a particular test?
  - does he have unrealistic expectations of his abilities, e.g. assumes he will be picked for a football team even though he is not very good?
  - is he aware of the problems he has as a result of the accident, e.g. poor memory, "slow", difficulties at school?

2. **GOAL SELECTION**

* Can you describe the problems he has with setting realistic aims? Give examples.

* Does he:
  - say he is going to do something and never actually do it, e.g. tidy room?
  - allow sufficient time to do a task?
  - have the ability?
  - have all the equipment?

* Older students:
  - Are his employment hopes realistic?
  - Is he taking steps towards preparing himself for getting a job?
3. **DRIVE/MOTIVATION**

* Can you describe the difficulty he has with starting activities/conversation? Give examples.

* Is he able to:

  - initiate conversation with; family members?
    - friends?
    - relatives?
    - acquaintances (e.g. local shop keeper)?
    - strangers?
  - ask for help if needed?
  - if with a group of friends does he initiate ideas for activities for the group to do?
  - does he initiate jobs around the house without being asked, e.g. take the dog for a walk; put dirty clothes out to be washed; if someone is washing up will he get up and help?
  - if with family and everyone is bored, e.g. rainy day, school holidays, will he initiate ideas for things to do?

4. **MONITORING OF BEHAVIOUR**

* Can you describe the kinds of problems he has saying and doing the right thing at the right time? Give examples.

  AND/OR

* Can you describe the kinds of problems he has with checking his own progress as he goes along? Give examples.

* Does he:

  - unexpectedly change the topic of conversation?
  - seem rude or abusive?
  - interrupt others conversation?
  - interrupt others when they are working or busy?
  - frequently embarrass you with his remarks or behaviour?
  - go off the topic in conversation?
  - often annoy his brothers and sisters? When does this happen? e.g. switching channels.
* Does he:
  - ask for help?
  - check his homework for mistakes once he has completed it?
  - when doing the washing up does he check around to make sure there are no dirty dishes remaining?
  - check his bag each morning for his sports equipment, lunch, correct books for the day?
  - when given instructions, if too complicated or too many at once, does he ask you to slow down, repeat, stop etc?

5. INTEGRATION/REASONING

* Can you describe the problems he has with putting together different pieces of information to work out a problem?

* Has the child ever got lost? What happened? How does he cope with sudden changes in plans?
  e.g. - train or bus is cancelled.
       - change in appointment time.

* How does he cope with an emergency situation?
  e.g. - toast burning.
       - bath overflowing.

* Is he able to appreciate humour/jokes?

* Does he understand phrases such as:
  "You're driving me up the wall"
  "Fly off the handle"
  Proverbs etc.?

* Does he have difficulty following the storyline of a TV show/film?

* Does he understand the logic of games?
6. **PLANNING**

* Can you describe the kinds of problems he has with planning? Give examples.

* Is he able to:

  - get out of bed and ready for school?
  - tidy his room?
  - plan an activity/party?
  - plan an essay?
  - plan a study plan?
  - plan the afternoon regarding homework, seeing friends/or a Saturday?

* Does he waste time looking for things?

* Is he often late for things?

* Compared to other children in the family does he set about things in an organised way, e.g. washing up; does he change the water, wash the glasses first?

7. **SEQUENCING**

* Can you describe the problems he has with doing or saying things in the right order? Give examples.

* When describing a movie or TV program is he able to report in the right order?

* When describing something that has happened, e.g. incident at school, accident, is he able to report in the right order?
INDIVIDUAL PUPIL PROFILE FORM

SELF-PERCEPTION PROFILE FOR CHILDREN
(Revision of the Perceived Competence Scale for Children)

Susan Harter, Ph.D., University of Denver, 1985

Name: J  Grade: 3  Age: 8  Gender: M

DATE:

Pupil's rating  Teacher's rating  Mother's rating

SUBSCALE SCORE

High

Medium

Low

<table>
<thead>
<tr>
<th>SCORING</th>
<th>SOCIAL ACCOMPLISHMENT</th>
<th>ACADEMIC PERFORMANCE</th>
<th>PHYSICAL APPEARANCE</th>
<th>BEHAVIORAL CONDUCT</th>
<th>GLOBAL SELF-WORTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholastic Competence</td>
<td>3.83</td>
<td>4</td>
<td>3.8</td>
<td>3.5</td>
<td>3.16</td>
</tr>
<tr>
<td>Social Acceptance</td>
<td>4</td>
<td>4</td>
<td>2.5</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Physical Appearance</td>
<td>-0.17</td>
<td>+0.3</td>
<td>+1.5</td>
<td>+2.84 = 1.79</td>
<td>0.358</td>
</tr>
</tbody>
</table>

Mean Discrepancy Score

Parent Rating

Teacher Rating

1.6  3.3  3.3  3.3  2.3

-  -  -  -  -
FEEDBACK FROM J'S ASSESSMENT

"Having a go"
→ checking it out
→ evaluating/assessing if capable enough to do it
→ starting } and
→ persisting } planning
→ completing/finishing
→ checking it’s okay.

Initiating tasks
- picking up on environmental cues, i.e. what needs to be done? (and the demands of the task).
- assessing if capable enough to do it (self assessment).
- knowing where to start, e.g. What do I need?
- how to begin? How to approach it
  - planning*
  - process/steps
  - systematically
  - strategies

Persistence in tasks
(chosen by child)
- knowing the process (HOW TO DO IT)
- knowing the steps (WHAT NEXT?)
- feedback - what feedback?
  - use of feedback?
  - checking for feedback (where it’s not intrinsic)
- rewards - during task, at end.

*Planning an approach to tasks
- stopping to consider HOW/WHAT/WHEN etc
- taking time before beginning the task
- making a plan (process and skills)
- monitoring each step.
## J's GOAL ATTAINMENT SCALE

<table>
<thead>
<tr>
<th>Predicted Attainment</th>
<th>Score</th>
<th>Goal Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Weekly Timetable (Weight = 2)</strong></td>
<td></td>
<td><strong>2. Adherence to Before &amp; After School Routine (Weight = 3)</strong></td>
</tr>
<tr>
<td>Most Unfavourable Outcome</td>
<td>-2</td>
<td>Jaryd does not help to develop his written weekly timetable.</td>
</tr>
<tr>
<td>Less Than Expected Outcome</td>
<td>-1</td>
<td>Jaryd helps to develop his written weekly timetable 1-2 of 3 weeks.</td>
</tr>
<tr>
<td>Expected Outcome</td>
<td>0</td>
<td>Jaryd helps to develop his written weekly timetable 3/3 weeks.</td>
</tr>
<tr>
<td>Greater Than Expected Outcome</td>
<td>+1</td>
<td>Jaryd helps to develop his written weekly timetable 3/3 weeks and a loose written plan for the school holidays.</td>
</tr>
<tr>
<td>Most Favourable Outcome Likely</td>
<td>+2</td>
<td>Jaryd helps to develop his written weekly timetable 3/3 weeks, a loose written holiday plan and indicates his intention to continue a simple timetable next year (as needed).</td>
</tr>
</tbody>
</table>

* Before School Routine includes getting dressed and cleaning teeth.

After School Routine includes putting lunch box on bench and getting changed.

** Weekend Routine Activities includes getting dressed and cleaning teeth.
<table>
<thead>
<tr>
<th>PREDICTED ATTAINMENT</th>
<th>SCORE</th>
<th>3. Feeding the Dog (Weight = 2)</th>
<th>4. Use of Free Time and Making Choices (Weight = 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Unfavourable Outcome</td>
<td>-2</td>
<td>Jaryd feeds the dog 0-2/7 days for two consecutive weeks.</td>
<td>Jaryd selects and does none of the activities where choices are given in his written weekly timetable.</td>
</tr>
<tr>
<td>Less Than Expected Outcome</td>
<td>-1</td>
<td>Jaryd feeds the dog 3-4/7 days for two consecutive weeks.</td>
<td>Jaryd will select and do at least 1 activity each day where choices are given in his written weekly timetable.</td>
</tr>
<tr>
<td>Expected Outcome</td>
<td>0</td>
<td>Jaryd feeds the dog 5/7 days for two consecutive weeks.</td>
<td>Jaryd will select and do 2 activities each day where choices are given in his written weekly timetable.</td>
</tr>
<tr>
<td>Greater Than Expected Outcome</td>
<td>+1</td>
<td>Jaryd feeds the dog 6/7 days for two consecutive weeks.</td>
<td>Jaryd will select and do 2 activities each day where choices are given in his written weekly timetable, choosing at least 1 activity other than Sega or TV.</td>
</tr>
<tr>
<td>Most Favourable Outcome Likely</td>
<td>+2</td>
<td>Jaryd feeds the dog 7/7 days for two consecutive weeks.</td>
<td>Jaryd will select and do 2 activities each day where choices are given in his written weekly timetable, including an activity not on his list.</td>
</tr>
</tbody>
</table>
### Appendix 6 (cont)

<table>
<thead>
<tr>
<th>PREDICTED ATTAINMENT</th>
<th>SCORE</th>
<th>GOAL AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5. Making a Plan (Weight = 2)</td>
<td>6. Following a Plan (Weight = 2)</td>
</tr>
<tr>
<td>Most Unfavourable Outcome</td>
<td>-2</td>
<td>Jaryd lists 0-2 of 5 steps in his plan.</td>
</tr>
<tr>
<td>Less Than Expected Outcome</td>
<td>-1</td>
<td>Jaryd lists 3-4 of 5 steps in his plan, with verbal cues to list activities within 5/5 steps.</td>
</tr>
<tr>
<td>Expected Outcome</td>
<td>0</td>
<td>Jaryd lists 5/5 of the steps in his plan for making a discus area with verbal cues to list the activities within 5/5 steps.</td>
</tr>
<tr>
<td>Greater Than Expected Outcome</td>
<td>+1</td>
<td>Jaryd lists 5/5 of the steps in his plan, with verbal cues to list the activities within 3-4 of 5 steps.</td>
</tr>
<tr>
<td>Most Favourable Outcome Likely</td>
<td>+2</td>
<td>Jaryd lists 5/5 of the steps in his plan, with verbal cues to list activities within 0-2 of 5 steps.</td>
</tr>
</tbody>
</table>

* "Plan" in this goal refers to his timetable or a plan Jaryd makes for an activity, e.g. a plan for riding his motorbike, using the steps guide.
AUDIO-VISUAL CONSENT FORM

SELF:

I, ____________________________
of ____________________________,
hereby consent to being (delete whichever is not applicable)

VIDEOTAPED _______ AUDIO-RECORDED _______ PHOTOGRAPHED _______
during my treatment at the ____________________________.

OR

OTHER

I, ____________________________
of ____________________________,
hereby consent my ____________________________ (Relationship)
being: ____________________________ (Name)

VIDEOTAPED _______ AUDIO-RECORDED _______ PHOTOGRAPHED _______
during his/her treatment at the ____________________________.

I understand that this recording or photograph(s) may be used in the following ways:-

1. As clinical records and treatment.
2. As educational tools in the training of students and professionals at Westmead or other institutions.
3. To help in the treatment of other patients.

I understand that when these recordings are used for purposes other than the treatment of myself/my ____________________________, that my ____________________________ confidentiality will be respected.

The reason for the recording or photograph(s) and the purposes for which they will be used have been explained to me by: ____________________________

SIGNATURE: ____________________________

DESIGNATION: ____________________________

SIGNATURE: ____________________________

DATE: ____________________________

MR. Sa
THE PLANNING PROGRAM

INFORMATION FOR PARENTS AND THE CHILD

INTRODUCTION

Planning and organisation skills are often impaired when children have a head injury. Memory, concentration and other abilities also affect our ability to perform activities in a logical and timely way.

Often children with problems in these areas can learn ways to go about things that will help them to achieve tasks more successfully at home and in other places, e.g. knowing where to start, getting things done on time, checking for mistakes and correcting them.

AIM OF THE PLANNING PROGRAM

* For the child to learn simple ways to compensate for problems in planning and organisation through a structured home program.

WHAT DO WE DO?

* Assess the child’s strengths and weaknesses e.g. Parent Interviews.

* Carry out play activities with the child and parents, to learn and practise planning and organisation skills e.g. making and following a plan for feeding the dog. Videoing and checking the video is part of each play activity.

* We ask you to continue or practise some of the play activities at home with your child between sessions. Your involvement and enthusiasm are very important in helping your child to see the value in planning, so they will learn to plan with less and less of your help.

* Evaluate the child’s progress. Your child continues with set play activities, and with follow-up by therapists.

TIME INVOLVED

* This varies from child to child but is usually 2 to 3 months.

HOW PARENTS ARE INVOLVED

* Parents are asked to be involved at all stages, but especially in the set play activities between therapists’ visits.
## SCHEDULE OF MEETINGS FOR J'S PLANNING PROGRAM

<table>
<thead>
<tr>
<th>DATE</th>
<th>PROGRAM STAGE</th>
<th>MEETING/VISIT</th>
<th>PRESENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-9-93</td>
<td>Referral/Assessment</td>
<td>Consultation with referring doctor and case monitor</td>
<td>Author, Dr A, case monitor</td>
</tr>
<tr>
<td>6-10-93</td>
<td>Assessment</td>
<td>Home visit (interview)</td>
<td>Author, case monitor, J &amp; family</td>
</tr>
<tr>
<td>1-11-93</td>
<td>Assessment</td>
<td>Parent interview</td>
<td>J’s mother, author and case monitor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Neuropsychological assessment</td>
<td>J with neuropsychologist</td>
</tr>
<tr>
<td>11-11-93</td>
<td>Assessment</td>
<td>Home visit (Harter Profile, program discussion, consent)</td>
<td>Author, case monitor, J, J’s family</td>
</tr>
<tr>
<td>16-11-93</td>
<td>Program Planning</td>
<td>Consultation with Evaluation Supervisor</td>
<td>Author, case monitor, Program Evaluation Supervisor</td>
</tr>
<tr>
<td>17-11-93</td>
<td>Program and Evaluation, Planning and Goal Setting</td>
<td>Home visit (feedback, goal setting, consent, rapport building)</td>
<td>Author, case monitor, Program Evaluation Supervisor, J, J’s family</td>
</tr>
<tr>
<td>18-11-93</td>
<td>Intervention (Planning Program)</td>
<td>Home visit (Session 1)</td>
<td>Author, case monitor, J, J’s family</td>
</tr>
<tr>
<td>23-11-93</td>
<td>Intervention (Planning Program)</td>
<td>Home visit (Session 2)</td>
<td>Author, case monitor, J, J’s family</td>
</tr>
<tr>
<td>DATE</td>
<td>PROGRAM STAGE</td>
<td>MEETING/VISIT</td>
<td>PRESENT</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------</td>
<td>----------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>25-11-93</td>
<td>Intervention (Planning Program)</td>
<td>Home visit (Session 3)</td>
<td>Author, case monitor, J, J’s family</td>
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<tr>
<td>29-11-93</td>
<td>Intervention (Planning Program)</td>
<td>Home visit (Session 4)</td>
<td>Author, case monitor, J, J’s family</td>
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<td>Home visit (Session 5)</td>
<td>Author, case monitor, J, J’s family</td>
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<td>Intervention (Planning Program)</td>
<td>Home visit (Session 6)</td>
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<tr>
<td>9-12-93</td>
<td>Intervention (Planning Program)</td>
<td>Home visit (Session 7)</td>
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<tr>
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<td>Intervention (Planning Program)</td>
<td>Home visit (Session 8)</td>
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<td>15-12-93</td>
<td>Evaluation</td>
<td>Home visit - Program evaluation (interview, GAS follow up)</td>
<td>Author, Program Evaluation Supervisor, J, J’s family</td>
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<td>-2-94</td>
<td>Follow up</td>
<td>Home visit (carryover, monitor progress, re-establish timetable/schedule)</td>
<td>Case monitor, J, J’s family</td>
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<tr>
<td>-2/4-94</td>
<td></td>
<td>Fortnightly to monthly home visits to ensure carryover</td>
<td>Case monitor, J, J’s family</td>
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Appendix 9 (cont)
PROGRAM DIARY

Assessment Feedback and Goal Setting Session - 17-11-93

Present: J's parents, J, A (in other room), Program Evaluation Supervisor, Therapists.

Activities

Discussion with J's parents regarding:

1. Feedback from the Assessments, i.e. problem areas

* "Having a go" - involves complex planning skills, especially for new or unfamiliar activities.
  * e.g. initiating tasks
  * persisting in tasks
  * planning one's approach to tasks
  * monitoring it as you go and making use of feedback.

* Differences between low self confidence and "laziness" and poor planning skills → leading to difficulties in above areas.

* Need for planning skills and overall schedule/timetable within which to plan.

* The way the planning program can help with planning skills by compensating for poor planning.

2. Goals for J's Program

J:
- Ride his motorbike.
- Play (alone) after school, then watch a little TV, e.g. play basketball, swimming, sandpit.
- To construct a discus/shotput practice area.

Mother:
- Getting ready for school without prompts, e.g. clean teeth, get dressed everyday.
- Put lunchbox on the sink.
- Change clothes after school.

Father:
- Feed the dog everyday after school.

Reward for J:
- Father and J to make discus circle (during the program) for J to practice discus and shotput.
3. Program Evaluation

The Goal Attainment Scaling method was discussed with J's family and the consent forms explained and signed.

4. School Issues

School issues were also discussed at parents request.
Session 1 - 18-11-93

Present: Mother, J, A (later), father (later), therapists

Activities

1. What is a plan?

J gave one or two appropriate examples of a plan, e.g. instructions telling you what you have to do.

2. "The Boy Who Had A Plan/Hadn't A Plan"
   a) J was asked to look at the two stories and tell us the story as he could.

   He identified the fishing activity, but found it hard to tell the story in the case of the boy who hadn't a plan. He identified some errors (with prompting) made by the boy who hadn't a plan.

   b) From the cards (8 cards separate, on cardboard), J then shuffled and reordered the cartoon to make the two stories complete. Correct first time. He then retold the two stories.

3. Timetable

Together we constructed a timetable for Friday (19-11-93) to Tuesday (23-11-93). J identified routine tasks that he does, and thought of activities for his play times. Parents and J's goals were included. J also helped by writing in some of the timetable, but soon became distractible/restless. J's mother helped ++.

Stickers were provided and instructions for ticking activities off and giving the stickers as rewards were given.

Our next visit was planned and added into J's timetable.

Next visit on 23-11-93.
Session 2 - 23-11-93

Present:        Mother, J, A (partly), therapists, father (in yard).

Activities

1. Feedback on Timetable

J had no problems following his routine/timetable on school mornings.

* J stated four routine activities after bike riding on Sundays without looking at his timetable.

* J came up with new ideas on weekends - mother noticed that J had lots of new ideas, and requested to go here and there.

* Mother seemed pleased with this, although she hinted that J had "tired her out".

* Most of the activities J suggested depended in some way on J's mother to help, e.g. do it with J, take him somewhere, set up J.

* Most prompts to check the timetable were needed at less routine/busy times, e.g. weekends.

* Washing hands before lunch and tea was generally not a problem for J.

* Dog sometimes fed after tea because it was "too hot before tea".

* Mother suggested it go in the after tea time slot instead because of the heat and potential for the dog to be fed scraps/leftovers from tea.

* Some activities could not be achieved because of weather constraints, e.g. ride motorbike, swim, others because mother/father couldn’t carry through with these, e.g. visiting aunty, reading/spelling work. These were marked with an asterisk.

* Mother said sometimes J complained about having to check his timetable and she and father had to help keep him motivated at these times.

* Ed! → check with mother who does the checking for sticker with J.

* Stickers = 5/5, (but a few activities not actually done). May need more frequent rewards. Mother suggested she will buy a stamp to stamp each activity rather than tick it.
2. **Next timetable**

Together, we sat and made J's timetable for Wednesday - Saturday morning (24-29/11/93), with J requested to add as much information as possible. Mother helped J with writing. Included in this was a timeslot on Saturday for mother and J to sit and complete the timetable from Saturday - Tuesday, including our visit on the Monday, i.e. homework.

J attended for 10-15 minutes, then became restless, needing encouragement to complete it.

3. **What am I doing? Guessing Game**

The case monitor and I acted out a charade/skit, videoed by J, after demonstrating the use of the video.

J had to guess what we were doing. We recalled the steps to the activity (bathing a dog), pointing out that J was able to guess what we were doing from the steps to the activity.

Next, J had a turn at acting a charade - going for a ride on his motorbike, putting it away in the garage, locking the garage, coming inside, having a drink, then playing some Sega. (He remembered to get his "helmet" for the bikeriding, using a hat as a prop!).

4. **School Issues**

Discussion regarding school meeting next year took place during timetable-making. (This may have contributed to J's waning attention to the task).
Session 3 - 25-11-93

Present: Mother, father, J, A, therapists

Activities

1. Timetable feedback

Stamp, stickers, checking/stamping, bigger reward.

* Some encouragement needed by parents to keep J interested in timetable. Nevertheless stickers were awarded by parents each day.

* Manages okay with ticking and stickers.

* Activities asterisked when not done due to other family commitments, bad weather, etc. Good monitoring skills.

* Good completion of all routing tasks.

* Some hint that mother finding the task of reminding J and checking timetable with J demanding.

* J added some simple illustrations to each row of his timetable (the "time of day" row) to help him understand the layout of the timetable more easily.

* Headings were added: time and day of the week.

2. Steps

The case monitor gave feedback of the neuropsychological assessment to the parents while the author worked with J.

Steps to the plan were introduced - visual and written information. Author wrote plan devised by J (with verbal prompts) for riding his motorbike. The "scroll" guide was used. J remembered "The Boy Who Had/Hadn't A Plan".

3. New Activities

Video new activity without plan; make a plan; video new activity with a plan; review video.

* J chose "Soccer with A and pet dog"

* Videoed without a plan. Video review highlighted dog uninvolved, no boundaries or goal areas defined and J soon becoming disinterested and starting to play basketball alone instead.
* Repetition of same activity with a plan - "Soccer with A".

* J & A helped make the boundaries following their plan. They waited for the referee (mother) to blow the whistle at appropriate points and counted goals scored. Video reviewed - J unhappy because he thought A had played unfairly in the game.
Session 4 - 29-11-93

Present: Mother, J, A, therapists

Activities:

1. Timetable

Brief timetable review including homework with J.

* J didn’t wish to keep ticking timetable - eventually problems were identified - didn’t like the frequent checking and ticking off of same activities everyday. Didn’t feel that the routine activities needed stating (and ticking) each day. (Also too detailed for ease of reading?).

* Didn’t want to feed the dog anymore - didn’t like to collect bowl.

2. New Timetable

Make new timetable - some activities without mum; homework to complete; choice of two cards; ? different sections each with stickers.

* Therefore we altered J’s timetable as follows:
  - less information
  - "choice of two activities" cards attached in blank spaces
  - feeding dog every second day
  - few spaces for rewards (stickers). (See Appendix 11).

Also we stuck the timetable onto J’s new whiteboard and negotiated with mother about rewarding J for feeding the dog, with pocket money - $2 per week for at least three feeds per week.

Examples of Cards

- Play cards or Basketball
- Dominoes or Swim
- Sega or Ride bike
- Play cars or Tip cricket
3. Review of Activity (soccer game)

Recall the two games of soccer - Which one had a plan?; Which one didn’t have a plan?; What happened when you didn’t have a plan?; What happened when you had a plan?

* Didn’t have much time for review of soccer games without and then with plan.

4. Homework

To complete timetable.
Session 5 - 1-12-93

Present: Mother, J, therapists (A in other room)
(NB: Very hot day, sat on floor in middle room, cooler, away from distractions)

Activities

1. Review of Timetable
   * Brief.
   * Going well.
   * Much better now with shorter simpler system.
   * Easier to read/follow.
   * Stickers both days.

2. Pictures on Plans (Symbols)
   * Teacher made plan to "Writing a Sentence".
   * J's plan for riding motorbike → J drew pictures for each step. Pictures were decipherable and relevant. Some difficulty matching step to picture at times.
   * J chose which activity he would draw from each step.

3. Plan
   J verbalised then wrote a plan (using the steps guide) for feeding his chooks, when given choice of swimming or feeding chooks. He then drew symbols alongside steps.

   Plan making required much prompting, even with guide.

4. Carried out Activity
   * J refused to be videoed.
   * Very minimal prompting needed.
   * Mother reminded regarding amount of food and water, several times. J did not close final safety gate, but mother said okay to leave open.
   * J was missing his TV program (? cartoons). We suggested next time mother tape it for him as a reward for after the session. J seemed quite resentful today:

     - ? missing TV program/swim
     - ? finding session hard - easily frustrated with his drawings → "I can't draw".
     - ? tired/hot.
     - hard tests at school last week.
Mother obviously upset with J because of his attitude, "everyone is trying to help you and you're not helping". Discussed this with mother later:

- encouraged to follow up on J's program goals, i.e. discus area.
- mother to measure discus area on Friday night at Little Athletics.
- mother to buy Christmas cards for J's next session.

5. **Homework**

J to write list of friends to give Christmas cards after session next week.
Session 6 - 7-12-93

Present: Mother, J, therapists (father and A out together - came home at end of session).

Activities

Parents were very happy with J's good results on school tests - "no E's and one A".

1. Review of Old Timetable

New simpler format worked well. J liked smaller timetable and lack of clutter. J also liked having to tick less often for routine activities. Mother reported that he is still consistent in performing these. Mother also reported less encouragement needed and no difficulty choosing between two activities.

Payment for chores - working well according to mother.

2. Complete new Timetable

J completed this with assistance to stay on task and with writing (spelling). He drew up the columns for free choice activities - indoor and outdoor activities on each side of his whiteboard and listed my suggestions (mostly activities he could do without mother) as well as some of his own. No problems discriminating between types of activities, but some difficulty thinking of activities without prompts. J chose to feed dog everyday again.

Better able to follow timetable - find where was up to, etc.

Better spelling! New "choice" stickers given for rewards when choice made by J and other stickers for end of day.

3. Plan for writing/giving christmas cards

J remembered the steps and, after some cajoling, agreed to be photography (with mum or with other therapists) throughout. Reminders needed by mother to keep plans simple. Prompts needed for contents of the steps, including check step.

4. Photos mounted according to plan sequence

J drew arrows indicating the correct sequence (first arrow in wrong direction!). He could identify which photos belonged to which step for 7/10 photos. J felt pleased with his finished product and requested to take one more photo of his mother with therapists and photoplan.
5. Homework

Mother to have items needed for next session (plan for discus area).

Mother suggested writing in on timetable what J chose to do, to monitor TV and Sega playing.
Session 7 - 9-12-93

Present: Mother, J, A, father (part) and therapists

Activities

1. Review of Timetable

   * Still going well (one of two stickers).
   * Okay choosing apparently. Wrote in what he chose (to monitor TV and Sega - didn’t do reading/spelling).
   * Feeding dog everyday again.

2. Reinforcing steps on Xmas Card Plan

   * Underlining steps and labelling photos.
   * Performance okay - remembered steps. Still slight difficulties in labelling when more than one photo for each step.

3. Plan for Making Discus Area

   * J chose not to use bord, but paint onto grass.
   * J didn’t think of measuring the circle - thought he could just paint a circle freehand. I suggested using string held at centre of circle.
   * J drawing out the area helped J to explain himself during planning.
   * Choosing spot - ? on plan? Check facing away from house?
   * J’s drawing of the area apparently incorrect. A drew it after mother checked with A.

4. Carried out the Plan

Father helped to get things needed. A helped to hold string. J maintained control of the spray paint, but waited for prompts to refer to plan and for directing his mother and A in what to do/where to stand, etc.

J needed prompts to hold spray can correct distance from ground for thick lines. Corrected himself when wind caught paint. Remembered this step with an indirect prompt only.

5. Mounting Photos

J needed minimal prompts to choose the correct photos - chose correctly 9/10 photos. Photos labelled according to steps. Arrows drawn correctly by J. J and A then returned outside to play on discus area with father’s weights as discuss (safety).
6. Discussion with Parents regarding:

a) Homework - school holiday plan. Mother will be taking the children away to Queensland for several weeks. Father will stay home to work. Mother is keen for plan to be very loose, i.e. few dates set. Mother encouraged to help J to think of what he needs to take for activities he chooses to do.

b) Jaryd’s school report:

Much better performance than previous report.

Mainly "B’s" and "C’s". A few "D’s" and one "A". No "E’s".

Some social improvement as well as academic, according to J’s teacher.

c) Next session (involving parents only) on 14-12-93.

d) Anne’s visit for evaluation with Toni on 15-12-93.
Session 8 - 14-12-93

Present: Mother, J, therapists

Activities

1. Completion of Photos for mounting plan for discus area, construction and use

J's father had painted a disc shaped weight for J to use on his practice area. J demonstrated the use of the discuss/practice area and appeared very pleased with his achievement. After a poor throw, J became noticeably upset, needing reassurance ++.

J recalled which part of his plan was yet to be photographed for mounting on his photoplan.

2. Structured activity involving photoplan

J correctly identified the steps to his plan, correlating the photos with the steps and mounting these in order. He correctly sequenced the photos and directed the arrows to show the plan sequence. He suggested a format for mounting his plan and labelling the steps.

3. Review homework - holiday plan for J and family

J and his family had completed their holiday plan together as requested. J's mother reported this to have been a successful exercise, although she was unsure of the acceptable level of flexibility ("looseness"). All family members had participated and contributed their own goals/activities and compromises made to suit the whole family, e.g. the timing of the activities.

4. Discuss "Hints on Carryover" Sheet with J's family
   Add parents' suggestions to sheet
   Provide spare planning sheets and reward stickers (I'm well organised, etc)

J's mother came up with some suggestions for carryover, for example, for J to use a calendar and use his whiteboard rather than cardboard for plans. She seemed quite willing and confident to use the spare step guides for plans with J, and to verbally prompt J in planning.
# EVOLUTION OF JS TIMETABLE

## Timetables 1, 2 and 3

<table>
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<tr>
<th></th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
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<tr>
<td><strong>Morning</strong></td>
<td>School Work</td>
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<td>School Work</td>
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<td>Wash Hands</td>
<td>Wash Hands</td>
<td>Wash Hands</td>
<td>Wash Hands</td>
<td>Wash Hands</td>
<td>Wash Hands</td>
<td>Wash Hands</td>
</tr>
<tr>
<td><strong>Afternoon</strong></td>
<td>School Work</td>
<td>School Work</td>
<td>School Work</td>
<td>School Work</td>
<td>School Work</td>
<td>School Work</td>
<td>School Work</td>
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<tr>
<td><strong>After School</strong></td>
<td>Lunchbox on Sink Get Changed Activity</td>
<td>Lunchbox on Sink Get Changed Activity</td>
<td>Lunchbox on Sink Get Changed Activity</td>
<td>Lunchbox on Sink Get Changed Activity</td>
<td>Lunchbox on Sink Get Changed Activity</td>
<td>Lunchbox on Sink Get Changed Activity</td>
<td>Lunchbox on Sink Get Changed Activity</td>
</tr>
<tr>
<td><strong>Tea</strong></td>
<td>Wash Hands</td>
<td>Wash Hands</td>
<td>Wash Hands</td>
<td>Wash Hands</td>
<td>Wash Hands</td>
<td>Wash Hands</td>
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<td>Feed Dog Shower</td>
<td>Feed Dog Shower</td>
<td>Feed Dog Shower</td>
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<td>Check for School</td>
<td>Check for School</td>
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</tbody>
</table>

Large cardboard sheet.
Activities - specified activity, written by J onto timetable, e.g. Lego, play cards.
Timetables 4 and 5

<table>
<thead>
<tr>
<th>JS TIMETABLE</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Early Morning</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Morning</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Free Choice</td>
<td>Motorbike riding</td>
<td>Free Choice</td>
</tr>
<tr>
<td><strong>Lunch</strong></td>
<td></td>
<td></td>
<td></td>
<td>Free Choice</td>
<td>Motorbike riding</td>
<td>Free Choice</td>
<td>Motorbike riding</td>
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<tr>
<td><strong>Early Afternoon</strong></td>
<td></td>
<td>Therapists Activity</td>
<td>Free Choice Activity</td>
<td>Therapists</td>
<td>Swim</td>
<td>Free Choice Activity</td>
<td>Motorbike riding event</td>
</tr>
<tr>
<td><strong>After School</strong></td>
<td>Free Choice Activity</td>
<td>Therapists Activity</td>
<td>Free Choice Activity</td>
<td>Therapists</td>
<td>Swim</td>
<td>Free Choice Activity</td>
<td>Motorbike riding event</td>
</tr>
<tr>
<td><strong>Tea</strong></td>
<td>Feed Dog Choice</td>
<td>Feed Dog Choice</td>
<td>Feed Dog Reading &amp; Spelling</td>
<td>Feed Dog Choice</td>
<td>Feed Dog Little Athletics Snack</td>
<td>Feed Dog Choice</td>
<td>Feed Dog Free Choice</td>
</tr>
<tr>
<td><strong>After Tea</strong></td>
<td>Feed Dog Choice</td>
<td>Feed Dog Choice</td>
<td>Feed Dog Reading &amp; Spelling</td>
<td>Feed Dog Choice</td>
<td>Feed Dog Little Athletics Snack</td>
<td>Feed Dog Choice</td>
<td>Feed Dog Free Choice</td>
</tr>
</tbody>
</table>

Manilla folder size
MY PLAN FOR: Riding my motorbike.

What Do I Need?
- Keys
- Helmet
- Gloves
- Shoes (Gear)

Beginning Step:
- Wheel bike out of the garage.
- Turn petrol on.
- Pull choke out.

Middle Steps:
- Get on bike
- Pull out lever
- Kick start
- Rev. throttle
- Warm up (idle)
- Start riding

Ending Step:
- Neutral
- Put bike in garage
- Turn petrol off
- Lock garage

Check:
- Lock garage
- Put gear away
- Put helmet on shelf in cupboard.
J'S WRITTEN PLAN  (Number 4)

MY PLAN FOR  GIVING XMAS CARDS  

What Do I Need?  

- Cards  
- Paper for list  
- Pen or Pencil  

Beginning Step  

- Write list of friends  
- Choose card  

Middle Steps  

- Write on cards  
- Put in envelope - seal envelope  
- Name on envelope  

Ending Step  

- Give to friends at school  

Check  

- Tick list of friends
HINTS ON FURTHER HELPING J WITH PLANNING

* The Planning Program involved a lot of your participation. These ideas are to help you carry over any effects of the program into your daily family life, without taking up so much of your time. The aim is for J to be gradually less dependent on your help to get started, persist with and check his own progress with activities. He can then feel more confident to "have a go", and will need fewer prompts, checks and reminders from you.

* Remember that motivation for, persistence with and confidence in activities depends on planning and organisation skills. That is, knowing how to go about the activity, knowing what you’re trying to achieve, knowing where/how to start, what is needed, the steps involved, checking and correcting mistakes.

It also depends on how suitable or hard the activities are, the rewards for doing the activity, how one feels on the day, the weather, etc, etc.

* Using the steps guide to planning, J should be able to plan out and complete a lot more activities at home. At this stage he can remember the steps, but you can reinforce these by prompting him, e.g. "J, what do we need for our picnic?". "What do we need to take for Little Athletics tonight?". "J, what do you need to check before leaving for school (clean teeth)?" Gradually, as activities become more routine or familiar to J, reduce the amount of prompting you give, but continue to reward him for getting things done. It is very important to reward him for remembering things without your prompts, or with fewer prompts. When he does this he is picking up on other cues that remind him, e.g. Slimy teeth!

* With a new building toy or board game, ask J to read the instructions and ask, "What do we need?", "What’s the beginning step?".

* If J wants to try something new and quite difficult, you may ask him to write or draw out the steps, using the steps guide. At other times, asking him to tell you the steps may be adequate. Always keep plans fairly simple, but try to include the crucial steps for safety, or those that can lead directly to success or failure, e.g. checking the bike has petrol, checking the petrol is off after riding, etc.

* For J, the check steps are most important, because of his tendency to rush in. When he does this he is most likely to make mistakes, which lead him to feel frustrated, less likely to try again and less likely stick at it. Again, prompts such as "What do you need to check?" and "Have you checked?", are helpful to avoid failure.

Check steps are used throughout activities, not just at the end, e.g. checking grilled cheese on toast while it is cooking, building a mechanical toy, writing a sentence or story, checking for sunburn while swimming, etc.
Appendix 12 (cont)

* As J gets older, planning skills become even more important, e.g. remembering school homework and finishing school assignments on time, catching buses and trains, knowing what to do if he's lost or if he misses the bus, getting to places on time, letting you know where he is when he starts to visit friends, etc. By learning to use planning skills now, J may achieve higher level planning later.

* Having an overall weekly schedule/timetable helps to give J's time at home more structure. With more structure, e.g. through the timetable together with knowing the steps, it is easier for J to plan and carry out activities that would normally require more help from you. (That's why schools have tight weekly routines that include time for schoolwork and time for free play). Of course being flexible to suit others' needs and bad weather, etc, is also important.

* 8 year olds are starting to learn to tell the time and to develop an understanding of time passing. J's timetable can help J to learn about concepts of time, which are important in planning. (Planning saves time, especially when things are done satisfactorily the first time).

* Try to include J in planning special and routine events for the whole family, e.g. for activities during your upcoming holiday.

* Help J to learn how you plan and solve problems within activities. Model this by sometimes saying your thoughts aloud, e.g. "Now, we need to be there by 9.00am. It takes half an hour to drive there, half an hour for breakfast, half an hour for getting dressed and packing our things, so we need to get up at 7.30am". e.g. when you're cooking or fixing something, say aloud your thoughts so J hears the steps you go through to reach your goal (a cooked meal) or to solve the problem (the broken/faulty part in the motorbike).

* Encourage J to say aloud the steps he would use to go about activities, both new and familiar. The more he can say, the less he'll need to write them down, which he finds a bit tedious.

* J does benefit from extra visual cues/information to explain and plan activities, e.g. his drawing of the soccer game, drawing the chook feeding steps, drawing out the discus/shotput area. Encourage this, especially when he is attempting something new, e.g. asking him to draw out the course in a new motorbike event; or to draw something he wishes to make.

* J also benefits from repetition of new information to help him store it in his memory for later use. Everyone needs this, but J may need more repetition. The more practice he has at planning and using the steps approach to planning, the easier it will be.
BROAD GOAL AREAS FOR J’S PLANNING PROGRAM

Therapy will focus on:

1. Developing a more structured home environment:
   * encourage a weekly after school routine;
   * encourage planning sessions involving whole family;
   * encourage family expectations that J will follow his routine and reinforce/reward this;
   * J to have a written (or symbolic) weekly plan;
   * J to adhere to his weekly routine/plans.

2. Structuring J’s approach to tasks/developing planning skills:
   J to:
   * help make a weekly plan (timetable) - write a plan
   * check his weekly plan everyday;
   * initiate the activities within his weekly plan;
   * choose an activity from his weekly plan, where choices given;
   * J and family to monitor his completion of activities on his weekly plan (check these off when completed).

J to:
   * complete all the activities on his weekly plan;
   * initiate activities in blank/free time or "have a go" spots, (other than TV or video games), from a prepared list;
   * help make visual plans for routine and novel tasks, using the step guide;
   * follow his visual plans to carry out the tasks;
   * complete the tasks planned and participate in feedback activities;
   * learn the steps to a plan and family to encourage use of the step guide (to planning) as a permanent compensatory tool.
EVALUATION OF THE PROGRAM
INFORMATION FOR PARENTS

The "Planning Program" was developed by the Paediatric Brain Injury Outreach Team, to teach children simple ways to identify and compensate for problems in planning and organisation following their head injury. Programs like this have goals and are evaluated at the end to determine how successful they were.

You have been asked to take part in evaluation of the "Planning Program", using a method called Goal Attainment Scaling (GAS). In GAS we sit together before the program to (1) look at problem areas for J and (2) to set goals for J to work on in the program. Then at the end of the program we sit together again to (3) work out how well the goals were achieved.

This process helps therapists, J and parents to work together in the program. The evaluation is not like an exam or test, it is just a special way of seeing how goals were achieved.

Anne Cusick, from the University of Sydney, will participate in J’s program evaluation as she has expertise in the GAS method. Anne will visit your home with Wendy and Toni, with your permission, once before the program and again at the end of the program. This will require one to two hours extra time and will give you an opportunity to talk more about J’s needs and progress. Benefits for J will include helping him to understand his therapy goals.

We would like to report the findings of this evaluation to other health workers. J and your family will remain anonymous and personal information will be kept strictly confidential. As his parents you will receive a copy of everything we prepare.

Dr A and Dr O are aware of and have given approval for the program evaluation with J.

You are asked to read and sign the consent form for J’s program evaluation.

If you have any questions regarding the program or the evaluation please call me. I am happy to answer any questions.

Toni Mitchell

Anne Cusick
CONSENT FORM FOR PARTICIPATION IN A PROGRAM EVALUATION

NAME OF PROGRAM: The Planning Program

NAME OF THERAPISTS: Toni Mitchell BA BApp Sc (OT)
Wendy Lewis, CNC
Therapists from PBIOT
BNU Westmead Hospital
Ph: (02) 633 6090

NAME OF PROGRAM EVALUATION SUPERVISOR: Anne Cusick MA(NSW) MA(Syd)
Senior Lecturer
Faculty of Health Sciences
University of Sydney
and Consultant
Occupational Therapy Department
Westmead Hospital
Ph: (02) 646 6394

J has been asked to take part in a program evaluation on the success or otherwise of the "Planning Program" to which he was referred by Dr Ault. The purpose of this evaluation, using a method called Goal Attainment Scaling, is to see if the "Planning Program" is successful in helping J to attain program goals.

J will be required to participate in program activities such as assessment (including observation of play, the Harter Self Perception Profile and parent reports of behaviour); treatment (including therapist directed play activities in the home, parents assisted follow up play activities in the home, videoing and replay of play activities during therapy sessions); and evaluation (including participation in goal review discussion, and repeat measures on indicators taken during the assessment phase).

J will have the choice to participate in the play activities or not.

Participation by J and his parents is entirely voluntary and J or his parents have the right to withdraw consent and discontinue participation in the program evaluation at any time without prejudice to present or future care with the Paediatric Brain Injury Outreach Team. There is no cost for any part of the program evaluation.
No discomfort or risks are anticipated. It is hoped that J will enjoy participation in the program evaluation and may benefit from doing so by learning more about his therapy goals. Information from this evaluation will be presented anonymously in any dissemination to ensure confidentiality. J will not be personally identified in any publication containing the findings of this program evaluation.

The video tapes and written material from the study will be kept in a locked cabinet. The video recordings will be viewed solely by members of the evaluation team.

Anne Cusick, Program Evaluation Supervisor, or Toni Mitchell, Occupational Therapist, are available to answer any questions you may have concerning the program evaluation, the procedures or any risk or benefits that may arise from participating in the evaluation.

As parent of the above-named client, I give permission for him to participate in the program evaluation described.

A copy of this consent form has been given to me.

Signed

______________________________
Date __________________

PARENT

______________________________
Date __________________

SUPERVISOR OF EVALUATION

______________________________
Date __________________

THERAPISTS
GOALS FOR J'S PLANNING PROGRAM

Family goals were initially as follows:

**J's mother:**
- for J to "have a go" at tasks.
- for J to have confidence to try activities.
- for J to persist at tasks ("be conscientious about things").
- more specifically, for J to consistently perform 1) personal care routines, such as cleaning teeth, getting dressed, washing hands before meals, and 2) after school routine, including placing his empty lunchbox on the kitchen sink and getting changed from his school clothes before play.

**J's father:**
- for J to feed his pet dog everyday.

**J:**
- for J to have a discus/shotput practice area at home.
- for J to play after school, then watch TV.

**A:**
- did not request goals for J's program, but expressed an interest in participating in aspects of the program.

Summary

**Overall Aim of J's Planning Program**

Within the structure provided at home, J will regularly select, plan and complete tasks, including familiar routine and occasional tasks.

**Specific Therapy Aims**

1. to influence J’s home environment, by encouraging a more structured routine, and

2. to teach J to use compensatory strategies for planning.
1. **What were the weak and strong points about the program?**

   **Mother’s Response:** The girls [therapists] were good. They were patient with J.

   In some aspects [of the program], he was having some difficulty.... For us, it’s another world, but the therapists are used to dealing with these kinds of problems (?referring to cognitive rehabilitation and children’s behavioural and cognitive problems).

   The good thing about it [the program] is that he [J] does do [clean] his teeth now.... and with his lunchbox, it doesn’t really matter whether it is done [placed on the sink] first or second [before or after changing his clothes after school], but it now gets done.

2. **Has the program helped with the original problems identified for J?**

   **Response:** In the short term, I think, yes, maybe, but I don’t think so in the long term, because once it’s [the program is] finished, he may not carry on at the same level [of progress].

3. **What are your ideas to enable J’s progress to carry over beyond the program?**

   **Response:** I think the idea of a calendar for J to use next year is a good one. We can use it for planning together and it’s there in front of him each day, so we don’t have to make up a new timetable each week.

   The whiteboard also works well, especially when he makes mistakes and gets upset with himself [for doing so].

   Cooking a meal [for the family] once a week. He does make cakes already. He enjoys this... I need to supervise.

   In the school holidays, we might plan exactly what we want to do for a week.
4. **What were the main weaknesses of the program?**

Response: That it might dwindle off in effect. You know, I can't always be around to help J with every new thing. I've been here more [than usual] because of my leave [from work], so, naturally I could help him and check [his timetable]. It's sometimes tiring [for me] to help with school homework, reading tutoring and timetables as well.

5. **What tips could you give another parents who is about to begin the program with their child?**

Response: Be patient and try to work well with the therapists. Give it a chance.

6. **What results have you seen?**

Response: I have seen results, but nothing over the moon. He [J] seems more organised within himself ..... In the mornings he can say I've got this, this and this [his belongings packed in his school bag], whereas before he'd be in a bit of a panic [when reminded of what he needed].

He is able to put things down into lists.... Even A [his brother] is writing little lists now.

7. **Without inferring anything from the program, have you seen any effects on J at school?**

Response: He has done much better at school, [although he started his school tests early during the program]. He seems pretty pleased with himself at school and at Little A's [Little Athletics].