An Examination of the Role of Teacher Aides Who Work with Children with Traumatic Brain Injury

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ABSTRACT

Children with traumatic brain injury (TBI) often return to school requiring modifications to their learning environment due to the subsequent effects resulting from a brain injury and one of the most common practices is to provide the child with a teacher's aide (TA) to assist the child in meeting the learning objectives set out by professional staff. The current study examined the role of TA's who work with children with traumatic brain injury. Using questionnaires, the views of TA's, parents and teachers of 16 children who had sustained a traumatic brain injury were sought and compared on a number of issues, including TA's knowledge about the effects of brain injury, nature of lesson planning, attendance at IEP meetings, job preparation and training, tasks and responsibilities, problems relating to TA's effectiveness, and TA's overall performance and effectiveness. Participants were also asked to describe ways in which the TA's performance could be improved and to describe any further thoughts they had regarding the role of the TA. The overall group differences between TA's, parents and teachers were examined as well as the individual responses of the TA, parent and teacher of 7 children. Key findings included, TA's should know a lot about the effects of brain injury, however, most were found to have some or very little knowledge; TA's should develop written lesson plans together, although most received instructions from the teacher; TA's should attend IEP meetings and most were found to attend all or some; TA's did not hold primary responsibility for a range of tasks; TA's required further training, particularly in the areas of brain injury, teaching strategies, and communication, and the majority of respondents believed TA's performance to be excellent or very good and TA's to be effective. Additional issues raised were, the TA's proximity to the child, the type of person employed as a TA and schools' lack of knowledge about the extent of the child's problems. Although there were some discrepancies in responses between individual TA's, parents and teachers of the 7 children, overall, TA's, parents and teachers' views regarding the TA's role did not differ significantly.

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CHAPTER 1

OVERVIEW

Traumatic brain injury (TBI) refers to brain injury that typically results from externally inflicted trauma, such as, vehicle accidents, falls, assaults and sports injuries (Consensus Development Panel, 1999). Due to advances in medicine, more people are surviving TBI now than ever before, with 6000 people in New Zealand admitted to hospital with TBI every year. However, it is estimated that a further 30,000 people sustain a brain injury without being admitted to hospital or coming to medical attention at all (ACC, 1998). While TBI affects people of all ages, a large number of cases are children. Males aged between 15-30 make up the largest group followed by children under the age of 15 (ACC, 1998) although it is considered that there is much more to learn on the incidence of TBI for both adults and children in New Zealand (ACC, 1998).

TBI can result in deficits in cognitive, motor and social functioning that are associated with high human and financial costs. It is estimated that hospitalised persons account for about 25 million dollars in direct costs along with indirect costs, such as outpatient support (Sullivan, 1997) and many go on to long term rehabilitation.

For children, one of the main goals following a brain injury is their eventual return to school. Because children spend much of their time at school, rehabilitation occurs in an educational setting where modifications to the learning environment or extra classroom support is often required to ensure a successful return to school. One of the most commonly instituted rehabilitation practices with children is to provide them with a teacher's aide (TA) who will work individually with the student to implement plans set out for the child by professional staff, however, my own experience as a TA, along with recent literature (e.g., Marks, Schrader, & Levine, 1999; Downing, Ryndak, & Clark, 2000; French, 1998) on the role of the TA raises questions as to the effectiveness of the TA's contribution to children's learning outcomes. I worked with a child with severe learning difficulties and found I made little progress with him. As a result of this, I was left with a feeling that my performance as a TA was inadequate and eventually I resigned from my position. My concerns regarding my effectiveness as a TA included my lack of teaching experience along with a lack of training and guidelines provided by professional

staff. Recent research, including interviews with TA's has raised similar concerns to my own.

The current study reports on the examination of the role of TA's who work with children with traumatic brain injury in New Zealand. Using questionnaires, the perceptions of TA's, parents and teachers of children with traumatic brain injury were sought and compared. The objective was to identify any problems or concerns that participants had about the role of the TA. The study was also aimed at providing a foundation for future researchers to examine ways in which the contribution of TA's can be enhanced to improve the learning outcomes of children with traumatic brain injury.

The current study is backgrounded and outlined in Chapter one. Chapter two provides a discussion about some of the consequences of TBI and factors that predict outcomes following TBI in children. Chapter three provides an overview of the educational issues surrounding a child's successful return to school following a brain injury and chapter four, an introduction to the role of the TA in education including a review of literature suggesting problems or concerns relating to the effectiveness of TA's. Chapter five provides the overall formulation of the study, chapter six a description of the methodology, chapter seven, the results, and chapter eight, a discussion of the current study including limitations and implications for future research.

CHAPTER 2

CONSEQUENCES AND PREDICTORS OF OUTCOME FOLLOWING TBI IN CHILDREN

TBI can lead to a variety of consequences that may not appear until well after release from hospital. Some of these consequences include, cognitive impairments, (i.e., memory and attention and a decline in intelligence), motor problems, (i.e., spasticity, ataxia and tremors) and personality and behaviour changes, (i.e., hyperactivity and poor impulse control) (Clark, 1997). Unfortunately, because these impairments do not often appear until some time after injury or are so subtle they are barely noticable, they are often overlooked by clinicians. This chapter examines some the consequences of TBI and factors that can predict outcomes following TBI in children.

Consequences of TBI

Attention and Memory

Of all cognitive domains, attention and memory are the most frequently impaired after TBI in adults and children (Mateer, Kerns, & Eso, 1997) and as they are essential for everyday functioning, impairment can lead to significant disability. Research has shown that children who have sustained brain injury exhibit attention deficits such as, poor concentration, distractibility, forgetfulness, inability to complete tasks and difficulties coping with more than one activity (Anderson, Fenwick, Manly, & Robertson, 1998). Children in particular are at risk for developing attentional problems following brain injury because attentional skills develop during childhood generally reaching adult levels between mid-childhood and adolescence.

Attention has typically been divided into three separate components; sustained attention, (maintenance of attention over a period of time); focused attention, (ability to filter relevant stimuli from irrelevant stimuli), and divided attention, (ability to attend to two stimuli simultaneously (Anderson et al., 1998). TBI can disrupt one or more of these processes (Anderson et al., 1998; Dennis, Wilkinson, Koski, & Humphreys, 1995). Generally however, more impairment has been reported in sustained and divided attention rather than focused attention.

Impairment of memory is one of the most enduring consequences of traumatic brain injury with numerous studies reporting deficits in both the storage and retrieval aspects of memory in both adults and children (Shum, Jamieson, Bahr, & Wallace, 1999). Most researchers examining memory processes use tasks such as word recall or yes/no recognition tasks. There are, however, methodological problems with many of these studies. These include, failure to distinguish between impairments in encoding, storage or retrieval; failure to ensure that the sample under study represents the general population of children with TBI, and finally failure to take into account that the fact that children may be at various stages of recovery (Roman et al., 1998).

In an attempt to overcome these methodological problems Roman et al recruited children from an inpatient trauma service rather than from a neuropsychological assessment service and assessed them at 1 month and 3 months post injury. They used the California Verbal Learning Test (CVLT-C; Delis, Kramer, Kaplin, & Ober, 1994), which assesses immediate recall of a word list after five learning trials, recall of words after short and long delays, and recognition of words using a yes/no format. Encoding deficits, rather than storage or retrieval deficits, were found to account for impairment of immediate and delayed recall and recognition accuracy, on the basis that a retrieval deficit would result in better recognition compared to recall tasks.

Most memory tasks, such as recall and recognition involve conscious recollection of previous experiences and assess explicit memory. Implicit memory does not involve conscious awareness and is generally less vulnerable to impairment after TBI (Shum et al., 1999). Implicit memory is assessed by tasks that involve presentation of word or picture fragments without any instruction to remember them. Later participants are given a word or picture fragment and asked to think of the first word or picture that comes to mind. Shum et al. (1999) in an examination of explicit and implicit memory using a picture fragment task, found that children with TBI performed worse on the explicit memory task compared to controls but that their performance on the implicit memory task was the same as controls. Shum et al suggest that this finding has implications for rehabilitation in that implicit memory could be used assist children with explicit memory impairment. Such an approach has been found to assist adults in developing new skills (Glisky, 1992; Glisky & Schacter, 1989) and may help children cope with the demands of academic work.

Language and Communication

In a review of the literature on language and communication impairments in children following TBI, Ylvisaker (1993) reported that following TBI, most children were unimpaired in speech production, but experienced impairments in language with regard to the use of socially appropriate language and language comprehension. They had difficulty instead in understanding verbal abstractions, drawing inferences and understanding indirect meanings, such as irony, used socially inappropriate language and had difficulty interpreting social situations. Ylvisaker also referred to research (Chapman, Culhane, Levin, & Harward, 1992; Dennis & Barns, 1990) where children who had sustained a brain injury used fewer words and missed out on essential details in a story-retelling task compared to controls.

One of the problems with language research is that the examination of language is usually through very generalised tasks, in spite of the fact that language consists of separate components, e.g., phonology, grammar, semantics, and pragmatics (Jordon & Ashton, 1996). In their examination of language impairments in children with TBI, Jordon and Ashton used a battery of tests that examined separate language components. They found that children with TBI displayed impairments in all language areas, and suggested that it was the combination of this impairment that led to general language impairment. Jordon and Ashton, however, only tested children with a severe brain injury. It is useful to compare mild with severely brain-injured children, as a severe brain injury may have explained why children displayed such profound language impairment. However, children with mild brain injury may only display language impairment in one or two areas.

Sensori-Motor Skills

Although there has been little research on the effects of TBI on sensori-motor skills, heminopsia, blurred vision, perceptual deficits, hearing loss and an inability to distinguish right from left, have been reported (Farmer, Clippard, Luehr-Wiemann, Wright, & Owings, 1997). Gagnon, Forget, Sullivan, and Friedman (1998) in assessing the motor performance of children with TBI in eight motor domains, (balance, response speed, running speed, bilateral coordination, strength, upper limb coordination, visuo-motor control, and upper limb speed), found that 40% of children with TBI were considered to be 'below average' on three domains, including, balance, response speed and running speed. These researchers emphasise the need to assess a number of motor skills rather than just one or two, as potential

motor impairments may be overlooked and to examine 'real life' areas of motor skills, such as sports and play.

Social and Behavioural Skills

Children with TBI are three times more likely to develop behavioural problems than the general population (Clark. 1997). These can be externalising behaviours, such as aggression or hyperactivity or internalising behaviours, such as depression and anxiety (Clark, 1997). Bloom et al. (2001) examined children aged 6-15 years for psychiatric disorders 1 year after TBI, using semi-structured interviews with parents and children, and a standardised parent rating scale. They found that 60% of the sample had developed a psychiatric disorder following TBI, with Attention Deficit Hyperactivity Disorder (ADHD) and depression being the most common disorders. The parental rating scale was sensitive in detecting external behaviour, such as aggression, however the scale was considered to be less sensitive in detecting internalising behaviour, such as depression. Psychiatric interviews with parents and children were more sensitive in detecting both external and internal behaviour underscoring the importance of using psychiatric interviews with both parents and children following TBI along with standardised measures.

Similar results were found by Sokol et al. (1996) who reported that 20-56% of parents perceived their children with TBI to be behaviourally impaired with 18-37% of problems within the clinical range. The problems included, anxiety, aggression, somatic complaints, social problems and delinquent behaviour, which were not related to injury severity. Behavioural impairments in turn were related to higher levels of parental stress that Sokol et al argued compromise parental care.

While the behavioural problems in children following TBI have been well documented, the social deficits have received less attention. Andrews, Rose, and Johnson (1998) examined both behavioural and social impairments in children with TBI and found higher rates of aggression, loneliness and anti-social behaviour and lower rates of self-esteem in children with TBI when compared to controls. However, cause and effect was not established (i.e., the social impairments were reactions to, rather than directly due to brain damage itself (Andrews et al., 1998).

Predicting Outcomes of TBI

Understanding just what factors predict outcome after TBI is important for the provision of adequate assessment and effective rehabilitation services. Such prediction is complex due to wide individual variability. Factors that have been found to predict outcomes in children include, severity of brain injury, nature of the brain lesion, pre-morbid functioning, and age at the time of injury.

Severity of Brain Injury

Brain injury severity ranges from mild to severe, with greater severity related to more significant consequences and the need for longer-term rehabilitation (ACC, 1998). However, even mild brain injury (MTBI) can result in lasting impairments in spite of the fact that the individual with MTBI often do not receive medical attention and may return to normal activities within a few days (ACC, 1998). Accordingly there is the risk of impairments being overlooked as they may not appear until well after injury or may be so subtle they are barely noticeable.

Brain injury severity is typically measured with the Glasgow Coma Scale (GCS; Teasdale & Jennet, 1974). The GCS measures depth of coma, specifically best eye opening, verbal and motor responses, with scores ranging from 3-15 (with 3 being the deepest coma. A score between 13-15 is classified as 'mild', 9-12, 'moderate' and below 9 'severe' (Teasdale & Jennet, 1974). However, while the GCS is a useful predictor of outcomes following initial recovery from injury, it is not always an accurate predictor of long-term outcomes, particularly in children (Grados et al., 2001). It has been found that lower scores on the GCS has not always predicted poorer outcome in children (Grados et al., 2001). While GCS scores have been found to relate to memory and motor speed 3 weeks post injury, it is not clear whether GCS scores predict long-term cognitive functions (Dennis, Wilkinson, Koski, & Humpreys, 1995). Limited use of language is another difficulty in applying the GCS in young children (Grados et al., 2001).

Nature of Brain Lesion

When predicting outcomes of TBI, it is useful to consider the nature of the brain lesion i.e., type size and depth of lesion. Brain lesions can be open or closed, diffuse or focal and the type of injury sustained may determine the severity of impairment.

An open head injury arises when the brain is penetrated, (e.g., from a shotgun bullet or fractured skull fragments), whereas a closed head results from internal damage to the brain, (such as a fall or the head coming into forceful contact with the brain). Focal damage usually results from an open head injury, and diffuse damage from a closed head injury. Diffuse damage is difficult to localise with brain-imaging techniques yet can be associated with mild to severe TBI (Grados et al., 2001; Gagnon et al., 1998).

Using a CT scan, Wallesch et al. (2001) compared the effects of focal and diffuse brain injury on attention, memory and executive functioning 8-31 days following trauma and again 18-45 weeks later in patients with mild to moderate brain injury. Diffuse brain injury was more often associated with greater brain injury severity (as defined by the GCS), and focal brain injury with milder brain injury. The most interesting result of this study was that, even though patients with diffuse brain injury showed greater brain severity according to the GCS and were left with significant impairments initially following brain injury, patients showed a marked improvement over time, whereas patients with focal brain injury who were classified as having milder brain injury and fewer effects initially, were left with impairments that remained stable over time. This result suggests that those with mild brain injury are not necessarily spared from impairment and also suggests the importance of using brain-imaging techniques along with GCS scores to predict outcomes. The results also suggest the importance of ongoing assessment to examine long-term outcomes following brain injury. However, the researchers examined adults, therefore the findings of this study may not generalise to children.

The size and depth of a brain lesion may also help predict outcomes of TBI. Di Stefano et al (2000) examined the relationship between the size of focal frontal brain lesion and memory functioning and found the volume of brain lesion predicted learning and memory impairment along with GCS scores and age. Grados et al. (2001) examined the depth of brain lesions (based on a classification system consisting of five groups ranging from the most superficial lesion to the deepest) in children with severe TBI. Children were assessed on the disability rating scale

(DRS) on initial release from hospital and again at a 1-year follow-up. Depth of lesion was correlated with the DRS at both points of time, in other words, the deeper the brain lesion the greater the number of functional impairments.

Assessing the nature of a brain lesion along with GCS scores helps explain the individual variability in outcomes following TBI, for example, why it is some researchers find deficits in mild brain injury and some do not. It may also help explain why some impairments are of a general or specific nature.

Pre-morbid Functioning

Pre-morbid functioning (e.g., pre-existing learning and behaviour difficulties, previous head injury, family functioning, and a family history of drug and alcohol abuse) has been found to predict outcomes following brain injury in both adults and children. In an assessment of psychiatric outcomes 3 months following TBI in children and adolescents Max et al. (1997) considered the effect of pre-injury functioning, (psychiatric, behavioural, adaptive, and family functioning and family history of psychiatric disorders) and found that pre-injury functioning predicted psychiatric outcome 3 months following injury. Higher ratings of intelligence reported by teachers were related to lower rates of psychiatric disorders. A history of psychiatric illness and family dysfunction were related to high rates of psychiatric disorders and high levels of family alcohol abuse were related to psychiatric disorders following TBI.

Ponsford et al. (1999) examined cognitive and behavioural outcomes in children with mild TBI compared to children with other minor non-brain related injuries. They found that at 3 months post-injury, most children with TBI did not display significant cognitive or behavioural impairments relative to controls. However, a sub-group of 17% of children were identified as having significant behavioural difficulties as identified by parents, and who had experienced previous head injury, pre-existing learning and behavioural problems, previous psychiatric disorders and/or family stressors. These children did not appear to have sustained cognitive impairments, suggesting pre-existing difficulties may have contributed to subsequent behaviour difficulties. This result suggests that it may not have been the brain injury itself that caused the behavioural difficulties but the behavioural problems may have been a reaction to pre-existing life stresses along with the further stress of a brain injury.

Developmental Considerations

Age is an important consideration when predicting outcomes of TBI in children. Predominant causes of injury vary with age with falls most common in the under fives and the likelihood of sustaining a brain injury and of that TBI being severe (due to an involvement in high-speed, high-risk activities, such as sports, recreation-based activities and motor or bicycle accidents) increasing with age, (Mateer, Kerns, & Eso, 1997).

Due to the functional plasticity of a child's brain, it had long been assumed that a child's brain can compensate for any damage that has occurred and that somehow children were protected from deficits occurring. Recent research, (e.g., Anderson, Fenwick, Manly, & Robertson, 1997; Verger et al., 2000), however, has shown that children, just like adults show impairments in cognitive and behavioural functioning, with some young children showing more persistent cognitive impairments than adolescents (Mateer et al., 1997). Brain injury in children can affect subsequent functions that develop later in life, such as higher order cognitive functions that may not develop correctly or fail to develop at all (Mateer et al., 1997). Failure to recognise the vulnerability of children to deficits following injury can lead to an inadequate evaluation of children's functioning following brain injury (Dennis, Wilkinson, Koski, & Humphreys, 1995). It is important to consider brain injury in children from a developmental perspective, in that brain damage in children can interfere with the normal developmental process (ACC, 1998).

Unfortunately clinicians are often guided by what is called the 'Kennard principle', in which children's brains are protected from the consequences of a brain injury due to the plasticity of a child's brain. This can lead to inadequate assessment and impairments sustained by children may be overlooked. Webb, Rose, Johnson, and Attree (1996) investigated the extent to which clinicians were guided by the 'Kennard principle'. They gave clinicians with expertise on the effects of brain injury fictitious case studies of both adults and children who had sustained a brain injury and asked them the extent to which they thought both adults and children would recover. Most professionals expected higher rates of recovery for adults. While this study did not make use of real life data, and it may be in a real life setting clinicians may respond differently, the results do suggest that clinicians appear to be guided by the 'Kennard principle'. This is despite recent research suggesting that children are not immune to deficits resulting from brain injury. Unfortunately, this can lead to inadequate rehabilitation provisions being put in place for children.

Examining children's long-term outcomes following brain injury gives both researchers and clinicians a more accurate indication of impairments resulting from TBI than examining children immediately after or in the first few months post trauma. Verger et al. (2000) investigated the relationship between age at injury and long-term impairments in a longitudinal study (6 years) in two groups of children (before and after the age of 8) and found that the younger the child when a brain injury was sustained, the greater the cognitive impairment. Only the younger age group showed a significant difference in cognitive performance when compared with controls. Anderson et al (1997) found similar results in another longitudinal study (2 years), in which sustained, focused and divided attention were examined in children with TBI. They found that while focused attention remained intact, children were left with deficits in sustained and divided attention 2 years after injury. Anderson et al argued that focused attention remained intact because this component of attention had matured by early childhood, however, because sustained and divided attention had not fully developed at the time of injury, the impact of the brain injury had disrupted the normal development of these components.

These studies are the exception as most studies examine only short-term outcomes, either after initial injury or in the first few months. Examination of the long-term outcomes provides a more accurate indication of the effects of brain injury, particularly in young children. If young children are assessed immediately after injury, the skills that develop later in childhood may be overlooked, leading to an over optimistic view of children's outcomes following brain injury.

Conclusion

TBI can lead to a variety of consequences for both adults and children. However, it is important to know what factors predict outcomes for adequate assessment to occur and effective rehabilitation programmes to be put in place. Predicting outcomes following a brain injury can be difficult as the effects of a brain injury vary for each individual. Factors that have been found to predict outcomes of TBI include, severity of brain injury, type, size and depth of brain lesion, pre-morbid functioning, and age at which an injury occurs. However, each of these on its own does not provide an adequate prediction of the possible outcomes children may sustain. Conflicting research regarding the effects of the severity of brain injury makes it impossible for clinicians to make an assessment based solely on the severity of brain injury, in particular clinicians need to consider that a mild brain injury does not necessarily mean a child will be spared from subsequent impairments. Too often, clinicians base their assessment of a child on the 'Kennard principle', and impairments in children may be overlooked. Therefore, when predicting outcomes for children with a brain injury, clinicians need to consider a number of factors. Such an approach will provide a more adequate assessment and increase the chance for effective rehabilitation programmes to be put in place.

CHAPTER 3

SCHOOL RE-ENTRY FOLLOWING TBI

Impairments that result from TBI can affect the child's ability to adapt to the demands of the school environment. Cognitive deficits, such as deficits in memory and attention can affect a child's ability to learn new information and recollect previously learned information, thus a child's academic achievement may be seriously hampered. Motor problems may impact on a child's handwriting or affect a child's ability to take part in school sports and other activities, and behaviour changes may affect a child's ability to interact with their fellow peers, resulting in isolation from others. Because children spend much of their time at school, much of their rehabilitation must occur in an educational setting. Unfortunately, children often return to school without adequate educational provisions being put in place. One reason for this is that, too often, it is assumed that once children have recovered physically from their injury, they are fully recovered and are ready to return to their normal everyday activities. This chapter provides a discussion on the educational issues surrounding a child's return to school following a brain injury, including a discussion on some of the problems affecting a child's successful return to school and ways in which children's return to school can be successful.

Factors Influencing Successful School Re-entry

Early Assessment and Intervention

Most authors agree that planning for a child's return to school should begin immediately following the injury. A collaborative approach should be taken in that school staff should communicate with medical and rehabilitation staff regarding the child's immediate condition in order to have some initial idea about the degree of educational provisions that will need to be put in place upon the child's return. School staff should gain important information including, the type and severity of the injury, time since injury, health status, amount of personal assistance required and the need for specialised equipment (Farmer & Peterson, 1995). Gaining knowledge at the early stage is important, as TBI is not an educational disability but a medical condition that may or may not result in impairments. Because education staff are not qualified or trained to work with persons with medical conditions, staff,

such as doctors, nurses and rehabilitation professionals can provide educators with valuable information.

A successful re-entry to school following a brain injury also requires a thorough assessment to determine the extent of the child's problems. There are a number of well-standardised neuropsychological tests that measure a range of functions, including intelligence, memory, perceptual skills, motor skills and academic ability, as well as new measures that assess functions particularly vulnerable to brain injury and important to school success (Farmer & Peterson, 1995). However, standardised assessment measures that are typically used to assess a child may not be appropriate for use on children with TBI. It has been suggested that tests, such as the Wechsler Intelligence Scale for Children, are too narrow or insensitive to academic impairments. Intelligence tests usually focus on well-established skills and verbal expression to examine cognitive deficits. However, skills that have been well developed may be spared following a brain injury, yet perceptual-motor or memory skills, which are not typically examined in intelligence tests may be overlooked, resulting in an over optimistic view about the child's ability to make a successful return to the classroom (D'Amato & Rothlisberg, 1997). Another problem with standardised tests concerns the environmental conditions in which they are conducted. The well controlled setting, one-on one situation and tasks that are well defined does not correspond to the school room/everyday situation and may therefore mask academic difficulties (D'Amato & Rothlisberg, 1997). Ewing-Cobbs, Fletcher, Levin, Iovino, and Miner (1998) examined reading recognition, spelling, and arithmetic achievement in children with TBI. Children were given a baseline evaluation and were then evaluated 6 months later and again at a 2-year follow-up. They found that children's achievement scores increased from 6 months after the first assessment and remained the same from 6 months until the 2-year follow-up. Overall achievement scores were average, however, despite average scores, 73% of the sample required modifications to their curriculum. This discrepancy between scores and curriculum modification suggests that the achievement tests used in this study may have been insensitive to academic impairments (Ewing-Cobbs et al, 1998), however, the researchers did not examine the impact of behavioural problems on children's educational outcome, as often, referral to specialist educational services results from behavioural rather than cognitive problems (Shaywitz, 1990, cited in, Ewing-Cobbs et al., 1998). A number of academic skills were not assessed and as standardised tests often focus on well

learned tasks, a wider range of abilities needed to be assessed, in particular, abilities that are critical to academic success, including problem solving, critical thinking, and abstraction of ideas from text (Ewing-Cobbs et al., 1998).

Assessment of children with TBI should consist not only of standardised measures but informal measures such as, observing children in the classroom, interviews with parents and teachers and viewing school and medical records as well. Current status, pre-morbid functioning should also be covered. Arroyos-Jurado, Paulsen, Merrell, Lindgren, and Max (2000) examined both current and pre-morbid academic functioning in children with TBI. Pre-morbid academic ability was found to predict reading and spelling achievement 2 years following brain injury. They found that the higher the child's ability prior to brain injury, the higher the level of reading and spelling achievement. This suggests that children with low academic achievement prior to a brain injury may be at a greater risk for academic failure compared to children with TBI who had a high level of achievement. Arroyos-Jurado et al suggest that a high intellect prior to injury provides a buffer against the effects of brain injury, although, it is not clear from the findings whether reading and spelling were impaired as a result of TBI.

Pre- morbid functioning is often not examined in children receiving additional educational assistance (D'Amato & Rothlisberg, 1997). However, it is essential to examine pre-morbid functioning in children with TBI as the child's pre-morbid functioning can help educators determine whether a child is at a greater risk of academic failure, thus increasing the chance for appropriate educational provisions to be put in place. Informal measures, such as interviews can prove useful in this regard. For example, interviews with parents can determine pre-existing difficulties in the child's behaviour at home prior to an injury or viewing a child's schoolwork prior to injury can determine the level of a child's achievement and establish any difficulties the child has had in particular academic areas.

Intervention Strategies. Following assessment, intervention takes place beginning with the development of an individualised education plan (IEP). The IEP details the child's problems, teaching strategies and goals for the child and is developed by and reviewed by educational staff and parents. The IEP of children with TBI should be reviewed and revised on a regular basis due to the unpredictable nature of TBI outcomes. There are a number of interventions that can be used on children with TBI, however, the efficacy of such approaches has not been established because of a lack of data for this population. However, authors have

suggested a number of strategies that have been found to be useful in non-brain injured children with disorders such as, Attention Hyperactivity Disorder (ADHD) or developmental delay.

Mateer et al. (1997) reviewed a number of interventions for memory and attention disorders, two of the most common cognitive impairments following brain injury. There are two types of intervention that can be used for cognitive deficits, these are, compensatory and restorative approaches. Compensatory intervention aims to compensate for or lesson the impact of a deficit and restorative intervention aims to improve or restore previous cognitive functions (Mateer et al., 1997). Meta-cognitive and self-regulatory approaches are examples of compensatory approaches. These include, goal setting, performance monitoring and evaluation. Tasks can include, recording behaviour regularly, for example, children may ask themselves a question and record their response and children asking themselves open-ended questions about a particular topic they have just learned. This allows the child to structure their thinking and ensures the child is attending to material. These techniques have been found to have a positive impact in children with ADHD, however, it is not clear how to use such strategies with TBI children (Mateer et al., 1997).

The direct retraining approach is an example of a restorative approach. Direct retraining approaches involve repeated opportunities to practice attention dependent skills. One such example is the Attention Process Training Programme (APT), which builds upon the attention skills spared following brain injury and involves the manipulation of both visual and auditory stimuli. The APT involves a variety of tasks that increases in difficulty and include, responding to stimuli presented in a particular sequence or restating words or numbers in reverse order. Other tasks may involve maths problems or extracting the main ideas from a written paragraph. The tasks given to patients depend on what areas of attention are impaired and patients cannot proceed to more difficult tasks until they successfully complete each given task (Palmese & Raskin, 2000). However, there is little evidence to confirm its efficacy in children although there is a small body of research showing its efficacy in children with ADHD. One of the problems with the APT is that the tasks require the use of well-developed cognitive skills (Mateer et al, 1997), however, the use of the APT may not be of much use in young children, as complex cognitive skills do not develop fully until mid-childhood to adolescence.

The use of memory aids is an example of a compensatory approach in managing memory impairments. External memory devices can be used to store and retrieve information and can include, computer based systems, paging systems, electronic watches and memory notebooks. They can be used to record specific events or experiences or to prompt behaviour through visual signals (Mateer et al., 1997). However, such devices can be difficult to use and require extensive training in their use. This can be a problem for individuals with learning and memory problems and may be even more difficult for young children and there is limited research on how to teach individuals how to use such systems and there is little or no information about their efficacy in children (Mateer et al., 1997). Specialised instructional strategies can be used to improve memory impairment. One such example is the use of implicit memory to learn new information. As mentioned previously, implicit memory has found to remain largely intact in children with TBI. Researchers have found that amnesiac patients can acquire motor, perceptual and cognitive skills through previous exposure to stimuli. The effect of previous exposure to stimuli is known as a priming effect. Priming can have implications for rehabilitation; however, the findings regarding priming effects have had little impact on the rehabilitation practices in children (Mateer et al., 1997).

Behavioural problems are also common following a brain injury. Intervention for behavioural problems can be either antecedent or consequential. Antecedent-based intervention aims to reduce the chances of inappropriate behaviour developing and consequential-based intervention aims to alleviate inappropriate behaviour or reinforce good behaviour once it has occurred. There has been much research about the efficacy of both types of intervention with adults with TBI. Antecedent control, however, may also be useful for children with behavioural deficits following TBI, in particular for children who have attention and memory deficits. Kehle, Clark, and Jenson (1996) discuss a variety of approaches that may be used in reducing behavioural disturbances in the classroom. These include, posting written rules in the classroom and in a place where they are clearly visible to the child, scheduling activities by reducing the amount of time on one particular activity, and structuring class space so that the child sits close to the teacher and away from others, which allows the teacher to monitor the child's behaviour and reduces the amount of distraction from other children. These approaches may be of particular use for children with attention and memory deficits following a brain injury. Consequential-based intervention can include, teacher praise for good behaviour, infrequent use of

teacher reprimands, and self-modelling which is a form of observational learning in which behaviour changes as a result of observing others. This may involve the teacher recording the child's good behaviour and showing the child its own good behaviour on a regular basis and eventually the child may then learn to model that behaviour in the classroom.

Motor problems are also common following a brain injury and although most rehabilitation for motor impairments occurs in an inpatient rehabilitation setting, the average stay in an inpatient setting has decreased and non-medical staff, including parents and educators, continue to manage ongoing motor problems (Russell, Krouse, Karas Lane, Leger, & Robson, 1998). Rigidity and spasticity are common problems following severe TBI. These types of motor problems inhibit a child's ability to move their body parts effectively and can leave a child completely immobile or with severe difficulty in moving independently. Usually the degree of rigidity decreases over time, however, children may still have difficulty using their limbs effectively, resulting in problems with handwriting or taking part in school activities (Russell et al, 1998). Russell et al discuss a range of motor interventions which educators can provide on a child's return to school. Educators can provide interventions, such as, providing activities for children that encourage the child to use their body parts, such as throwing and catching a ball or riding a bike. Both parents and educators should also encourage children to take part in school sports or other extra-curricular activities. Increasing the use of body parts helps limbs to become more flexible, therefore children should be encouraged to remain as active as possible, whilst also mindful of their limitations (Russell et al., 1998). Children could also be given repetitive tasks so that they become automatic for children. This approach is useful for children with apraxia, in which children cannot perform a task on command (Russell et al., 1998). However, despite interventions aimed at returning children to their previous physical state, modifications to the educational environment may have to be made. For example, if a child has difficulty with handwriting, they may need to use other devises to communicate, including typewriters, computers or a tape recorder. Modifications may also need to be made to the physical environment, such as allowing room for wheelchairs or other equipment or allowing greater floor space for the child to work.

Educators' Knowledge of TBI

A successful re-entry to school requires collaboration between educational staff to plan and implement the educational provisions a child with TBI needs. Unfortunately, most educational staff have limited knowledge and experience in working with children with neurological conditions. This can lead to inadequate educational provisions being put in place and place the child at an increasing risk for academic failure.

Most educators work with children who have been diagnosed with disorders, such as, learning disability, mental retardation or developmental delay. Children with disorders such as these can display problems in cognitive, social and motor domains, although these are constant deficits that follow a predictable pattern. Planning for these children may only need to be done on a yearly basis and the educators' experience in working with children with the same disorder can contribute to the goals set out for a particular child (D'Amato & Rothlisberg, 1997). The situation is different, however, with a child with TBI whose needs are more complex than other children with learning difficulties due to the individual differences in outcomes. Children with TBI may show deficits in some areas on initial return to school, however, other deficits may not develop until much later or deficits may increase or decrease in severity with time. And some children who have sustained severe brain damage may show little impairment, whereas children with mild brain injury may show significant impairment. Accordingly, the child with TBI should be evaluated at regular intervals and educational plans set out for them may need to be modified at various points of time. The methods used to teach TBI children may also need to be modified to meet the child's needs. It is usually an educational psychologist who assesses children who may require modifications to their learning environment; however, most authors agree that educators would do well to consult with persons with expertise on brain injury, especially during the assessment and planning phases.

Although most educators have limited experience in working with children with TBI, it is not clear what educators actually do and do not know about brain injury and there is limited research about educators' knowledge of TBI. A study by Hux, Walker, and Sanger (1996) of school speech-language therapists' perceptions about their readiness to provide services to children with TBI and their knowledge about TBI reported that the majority considered that they were not qualified or prepared to assess or treat children with TBI. Furthermore they gave inaccurate

responses to questions concerning their knowledge of TBI e.g. they did not know males sustained a greater number of injuries than females; believed that certain impairments, such as aphasia occurred in a majority of TBI cases and they also placed a greater emphasis on the importance of examining brain lesion location, when in fact, often in TBI, brain damage is not always made visible through brain imaging techniques (Hux et al., 1996). Speech therapists were aware, however, that the outcomes of TBI vary depending on the individual, and they knew the importance of assessing pre-injury factors and using both standardised and informal assessment measures.

Farmer and Johnson-Gerard (1997) compared the understanding about TBI in educators and rehabilitation staff through their responses to a questionnaire that contained a series of statements about TBI and participants were asked whether each statement was true or false. Overall, educators gave a greater number of incorrect responses particularly in the areas of memory, learning, emotion and long-term development, although they were correctly aware that complete recovery from a brain injury is not always possible and that TBI rehabilitation should focus on more than just a return to normal physical functioning. At the same time, however, rehabilitation staff know little about appropriate educational planning and teaching methods. Farmer and Johnson-Gerard have suggested that both rehabilitation and education staff need to develop an effective partnership in which both professions recognise each others strengths and weaknesses to work together to increase the chances for a child's successful return to school.

The results of these studies also suggest the need for training for educational professionals on the effects of brain injury on learning outcomes. Training of educational staff about the effects of brain injury is important in ensuring a child receives the highest quality education possible. Educators have been found to be more comfortable in providing services for children with TBI if they have sufficient understanding about effective strategies to use when working with children following brain injury (Ylvisaker et al., 2001). Hux et al. (1996) found in their study with speech-language therapists that training had a positive impact on speech therapists' confidence in providing services to children. Those who did receive training were more likely to provide services, to understand the terminology of TBI and understand the behaviours and characteristics of children with TBI. Ylvisaker et al. (2001) have suggested a number of recommendations for training education staff. These include, ensuring all teachers have access to a TBI specialist and investigating

the financial benefit of such support; investigating the effectiveness of specialist support using peer consultants with particular regard to teachers, students and parents, and developing on-going internet-based courses for educators.

Conclusion

Most children will eventually return to school following a brain injury, however, if appropriate educational provisions are not put in place, a return to school may prove challenging for the child. Factors that may inhibit a successful return to school include, inappropriate assessment measures and educators' lack of knowledge about TBI. A number of factors can increase the chances for a successful return to school. These include, a collaborative approach to assessment and intervention, with contributions from education, medical and rehabilitation professionals; the use of both standardised and informal assessment measures; assessment of the child regularly, and training education staff about the effects of TBI. There are a number of interventions that can be used to rehabilitate children with TBI. However, the efficacy of such approaches has not been established due to a lack of data available in the TBI population. Most interventions have been found to be effective in non-brain injured children with disorders, such as, ADHD or developmental delay, or in adults with TBI. Further researchers need to conduct well-controlled studies that examine whether interventions used in non-brain injured children are effective in children with TBI. Currently, there are no established rehabilitation programmes specifically targeted at TBI children, yet for children to make a successful return to the community, the need for rehabilitation programmes is paramount. Despite a lack of efficacy, children with TBI often exhibit similar symptoms to those with disorders that fall within typical special education categories, therefore interventions used in these children may also be useful in children with TBI.

CHAPTER 4

TEACHER AIDES: ROLES AND CONCERNS

As children with TBI often require extra assistance on return to school due to subsequent impairments resulting from brain injury, they are often provided with a TA to work one-on-one with them in order to implement the plans for the child set out by professional staff. This chapter provides a discussion about the role of the TA and some of the concerns raised with regard to the effectiveness of TA's.

Teacher Aides Funding

In 2000, the Ministry of Education and ACC signed an operational protocol, in which both parties are held responsible for the appropriate educational provisions to be put in place for children following an accident. Under this agreement, ACC is responsible for funding TA's. This protocol only applies to students who have had an accident and are covered under ACC legislation (Ministry of Education, 2002).

TA support can also be funded through either the special education grant for students with moderate learning needs or the on-going resourcing scheme (ORS) (Ministry of Education, 2002). The special education grant is paid directly to all schools to provide funding for students with moderate learning needs. Schools can choose how this money is spent and it may be used for a variety of services, such as therapists, including, physiotherapists, speech, and occupational therapists, and TA's. The ORS provides funding for children with high or very high needs that will continue throughout their school years. Schools must apply for funding under this scheme and may be able to decide how the money is spent but must apply to do so. In a number of New Zealand schools, the bulk of funding received under the ORS was used to employ TA's (Education Review Office; ERO, 2001).

What is a Teacher's Aide?

A TA works in a school, primarily in an instructional capacity and alongside school professionals to assist a child with special needs (Riggs, 2001). The role can have other titles, including, paraeducator, paraprofessional, instructional assistant or teaching assistant (Riggs, 2001) although in New Zealand, 'teacher's aide' is the most commonly used term in primary and secondary schools (Rutherford, 2002).

Historically, the TA's role grew out of a shortage of teachers arising when the life expectancy for children with disabilities increased as a result of advances in medicine and technology. TA's were seen as a solution to the teacher shortage and were initially employed to perform administrative tasks, allowing teachers more time to spend with exceptional children. However, changes in education throughout the years resulted in an increase of children with disabilities being placed in inclusive settings, thus the role of the TA changed dramatically from an administrative assistant to that of an instructor (Rutherford, 2002). Currently, TA's are used primarily in an instructional capacity. They spend most of their time in a one-to-one situation or in small groups. They undertake a variety of tasks including, assisting with health and personal care, assisting with class work or implementing plans set out in a child's individual education plan (IEP). The primary reason a TA is employed is to increase quality instructional time with a student with disabilities while the classroom teacher is providing instruction to others (French, 1999) and according to parents, teachers and TA's, the use of a TA in the classroom makes inclusion feasible (French, 1999). While TA's may come to the job with a wide range of skills, they often come to the job with little or no training or educational qualifications and while employers may look for TA's who have a considerable range of skills and experience, no specific educational qualifications are required. Most TA's are women who have raised families and have thus had considerable experience with children. This type of work is seen as a way of meeting financial needs while fitting with family life; however, as educational qualifications and experience are often not required, people often become a TA simply because they need a job (Rutherford, 2002).

Concerns Regarding the Role of the Teacher's Aide

One of the main concerns regarding TA's is that they are the least qualified, trained and experienced of educational personnel, yet often hold the highest levels of responsibility for children with the most complex of learning needs (Giangreco & Doyle, 2002). Although there has been much literature written about the role of the TA, there is no evidence suggesting that TA's have a positive impact on children's learning outcomes (Giangreco & Doyle, 2002). Most of the literature has raised concerns regarding the utilisation of TA's based primarily on qualitative research involving interviews with education staff, including TA's themselves. In

predominantly opinion-based articles (e.g., Boomer, 1980; French, 1999) authors recommend that for TA's to be effective they need to have adequate training and supervision by professional staff, appropriate education qualifications, clearly defined roles and responsibilities, and perform tasks that are within their abilities. However, researchers (Marks, Schrader, & Levine, 1999; Downing, Ryndak, & Clark, 2000) have found that often TA's do not receive training prior to employment, do no hold any formal qualifications, perform tasks that may be deemed beyond their abilities, assume a high level of responsibility for a child's learning and receive inadequate supervision by professional staff. Despite the lack of evidence concerning the effectiveness of TA's and the number of concerns raised, the use of TA's in schools has increased. Currently in the United States, there are an estimated 700,000 TA's employed (Wallace, Bernhardt, & Utermarck, 1999, cited in Rutherford, 2002) and although there is no estimated number in New Zealand, TA hours are the most requested service provided to students requiring assistance in New Zealand schools (Meyer & Bevan-Brown, 2000, cited in Rutherford, 2002).

A number of issues were raised in a study by Marks, Schrader, & Levine (1999) who examined the perspectives of TA's, in particular how they assumed their roles and problems they faced. Based on interviews with TA's, they found that TA's assumed a high level of responsibility for a variety of tasks. However, TA's also reported that they felt professional staff should hold primary responsibility for a number of tasks. Marks et al also examined why TA's held such a high level of responsibility. Some of the reasons for the development of that level of responsibility included, having to ensure the student was not a bother to the teacher, meeting students' academic needs, and being the hub or expert. TA's also reported that professional staff did not want to take responsibility for developing and modifying students' curriculum and therefore TA's felt responsible for meeting students' academic needs. TA's also felt that because they worked one-on-one with the student, they had greater expertise in dealing with children's challenging behaviours, which in turn resulted in TA's performing tasks on their own, such as, meeting with parents, and developing and modifying children's curriculum. TA's also reported feeling that they had primary responsibility for encouraging acceptance in the community of inclusion of special needs students in mainstream schooling.

Similar results using semi-structured interviews were found by Downing, Ryndak, and Clark (2000) who examined TA's understanding of their role, their training needs, and the concerns and challenges they faced. TA's reported performing a variety of tasks, however, TA's reported undertaking tasks that may be deemed inappropriate, including, providing behavioural support for children who disrupted others, modifying the curriculum, and informing parents of the child's performance through face-to face meetings. Of even greater concern was that the majority of TA's assumed a high level of responsibility for these tasks and yet received no training prior to or during employment in spite of most stating that they needed training, in particular in the areas of behaviour modification and teaching strategies.

A cautionary note concerning these studies is that the number of TA's interviewed was small, making the findings difficult to generalise to a larger TA population. Riggs (2001) in a larger study examined TA's perceived training needs using a combination of quantitative and qualitative techniques, including, surveys, written responses and interviews with TA's. 200 TA's were given surveys that listed a range of skills and were asked to place a star next to the skills they believed they needed further training in. A further 150 TA's were asked to write down areas in which they needed further training and finally 20 TA's were interviewed and asked what they believed they needed to make their job easier. The majority of TA's, believed they needed further training in the following areas; knowledge of specific abilities, behaviour management, working with other adults and inclusive practices. In a similar study, Riggs and Mueller (2001) examined TA's experiences using both qualitative and quantitative research methods. 23 TA's were interviewed using a guided interview format and a further 758 TA's were surveyed on a number of issues, including, TA's relationship with professional staff, satisfaction with the job, supervision, tasks and duties, and training. The results were similar for both interviewed and surveyed TA's. Both interviewed and surveyed TA's felt they needed further training, both were unclear about aspects of their job descriptions and both were either unclear about whose role it was to supervise them or received no supervision at all. Both interviewed and surveyed TA's also felt that an effective relationship with professional staff members was important. The use of both qualitative and quantitative techniques provided both a first-hand account of TA's experiences, however the quantitative content validated their comments and because

a large number of TA's were surveyed, the results may be generalised to a larger TA population.

These studies provided a first-hand account about the role of the TA; however, the researchers did not attempt to verify the TA's statements. This could have been done by interviewing other education staff or observing TA's in the classroom. French (1998) examined both the perceptions of teachers and TA's, specifically by examining the relationship between teachers and TA's, the duties TA's performed, TA's preparation for the job, the quality of their work, and teachers' perceptions about their role as a supervisor. French found that few teachers provided written lesson plans, but rather expected TA's to 'just follow along'. The teachers who did provide written plans did not provide sufficient detail according to the TA's, for example, teachers omitted crucial details, such as the overall goal and purpose of the lessons. Few teachers and TA's participated in formal face-to-face meeting or planning sessions. There were also discrepancies concerning the role of the TA. Some teachers considered a TA to be an assistant to a student; others considered a TA an assistant to the teacher. Some saw the TA as a teammate, rather than a supervisee, whose job it was to teach students, however, both teachers and TA's felt training was important. The greatest concern however, was that teachers were not willing to supervise TA's. Most felt that TA's should be able to function independently and to 'just get on with it'. Overall, TA's rated their own performance higher than teachers.

Being in close and constant proximity to the child can have a detrimental effect on children's learning outcomes. Giangreco, Edelman, Luiselli, and Macfarland (1997) examined the effects of instructional proximity of TA's on students by conducting classroom observations and interviews with teachers and TA's. They found that TA's maintained close proximity with students, such as, students sitting on TA's laps or accompanying students everywhere. They found however, that extensive proximity to students lead to detrimental effects including, a lack of responsibility by professional staff for children's learning, separation from classmates, dependence on adults, a negative impact on peer interactions, limitations on receiving competent instructions, loss of personal control, and interference with the teaching of other students.

Implications for Future Research and Practice

Development of Training Programmes

The examination of both TA and teacher perceptions shows that TA's and teachers hold undesirable or conflicting beliefs regarding the role of the TA. French, for example, found that teachers expected TA's to work independently without assistance from professional staff, whereas TA's believed teachers should hold responsibility for a number of tasks. Giangreco et al found that teachers did not describe their role as being responsible for a student's learning, but rather teachers believed the responsibility should lie with the TA. TA's themselves were satisfied with developing and implementing the student's curriculum without assistance from professional staff, however, one special education provider believed that the classroom teacher should take primary responsibility for a child's learning. Based on the finding of studies such as these, schools and policy makers should clarify the role of the TA and the teacher. Overall, the effective utilisation of TA's requires policies and procedures being put in place with contributions from all areas of education, including teachers, board of trustees, special education teachers and administrators (Riggs & Mueller, 2001). Researchers also need to conduct studies that examine teachers' perceptions about their ability to effectively supervise TA's. Although TA's may need training, recent research suggests that teachers themselves may not be adequately prepared to supervise TA's. Wallace, Shin, Bartholomay, and Stahl (2001) examined the knowledge and skills that teachers need to effectively supervise TA's. Using focus groups comprising TA's and teachers, a number of skills were identified. These included, communication with TA's, planning, instructional support, modelling for TA's, public relations, training, and management of TA's. TA's and teachers were then given a survey that examined how important they rated each skill and whether teachers demonstrated competency in these areas. While most TA's and teachers rated all areas as important or very important, a number of TA's did not perceive teachers as demonstrating these skills. The teachers who reported they did not demonstrate certain skills reported the reason was due to a lack of preparation or a lack of opportunities for professional development.

The findings from this study suggest that teachers themselves are not prepared to effectively supervise a TA, and along with TA's, they themselves may need extensive training to effectively supervise the TA with whom they work with. Research, such as this study is limited, however, and Wallace et al's study provides a

useful foundation for policy makers and administrators to develop training programmes based on skills that teachers consider are important. TA training programmes also need to be developed and their efficacy evaluated with well-controlled studies. One such example is the Teaching Skills Training Programme (TSTP) developed by Parsons and Reid (1999). This programme is aimed at training TA's and other support personnel basic teaching skills and focuses on four teaching strategies; task analysis, least-to-most assistive prompting, reinforcement, and error correction. The training format consists of a classroom-based component, on-the job monitoring and feedback, and follow-up supervision. The programme can be implemented directly to TA's by professional staff, such as a teacher, or by the pyramid method where professional staff are initially trained by an instructor and then professional staff in turn train TA's. The efficacy of this programme has been validated by studies showing 80% teaching proficiency following training as well as positive responses from staff regarding training procedures (Parsons, Reid, & Green, 1993; 1996). However, further research should be conducted regarding the efficacy of training programmes such as this, in particular whether such training leads to a positive effect on children's achievement. As well as this, further researchers need to examine specifically what supervisory methods teachers use in order to develop clear guidelines for teachers to follow. Such research would provide a foundation for education professionals to develop policies and procedures concerning the effective utilisation of TA's in education.

Development of Policies and Guidelines

In the United States, a number of universities and school districts are conducting research, developing policy guidelines, and providing resources relating to the education, employment, support and supervision of TA's (Rutherford, 2002). For example, the National Joint Committee on Learning Difficulties (NJCLD) have developed guidelines about what tasks TA's should and should not perform. They recommend that the tasks that TA's should perform depend on the level of skills and experience they have; however, TA's should always work under the close supervision of a school professional, such as the classroom teacher and ethically teachers should not give TA's tasks that are beyond the scope of their abilities (National Joint Committee on Learning Difficulties; NJCLD, 1998). At the most basic level, TA's can perform tasks, such as clerical duties i.e. photocopying, schedule activities, perform checks on equipment and implement some instructional

activities under the supervision of the teacher. For TA's with a higher level of education or experience, a greater range of tasks can be conducted, including, conducting screenings, assisting in providing supplementary work, and reinforcing learning in small groups while the teacher works with others, providing progress reports on the student to give to the teacher, using positive behaviour supports, assisting the teacher in the assessment of students, and participating in in-service training. However, the NJCLD recommends that TA's should not be held responsible for a range of tasks, including, assuming sole responsibility for children's learning, performing or interpreting standardised tests, participating in parent conferences without the presence of a teacher, developing or modifying IEP's, signing formal documents, disclosing confidential information, and referring to themselves as a teacher without the appropriate qualifications. The NJCLD also recommends that in order to make effective use of TA's, teachers need to take responsibility for their supervision. Effective supervision includes, participating in training with the TA prior to the start of employment, reviewing a child's IEP with the TA weekly, delegating specific tasks to the TA, reviewing all progress reports written by the TA, undertaking on-the-job training with the TA and evaluating the performance of the TA on a regular basis (NJCLD, 1998). A number of states have also developed legislation making it compulsory for TA's to undergo professional development and supervision, such as the Minnesota Omnibus Education Bill (Wallace, Stahl & McMillan, 2001, cited in Rutherford, 2002).

Currently, policies, guidelines, strategies and legislation for monitoring, training and utilisation of TA's in New Zealand do not exist (Rutherford, 2002). However, Section 8 of the Education Act (1989) states that children with disabilities have the right to be educated in the same setting as children without disabilities and TA's are seen as vital in ensuring the inclusion of such children. After visiting a number of universities and school districts in the United States, Rutherford reported a number of strategies that policy makers in New Zealand could adopt in ensuring the effective utilisation of TA's. Rutherford focused on five areas for further development in New Zealand, these include, legislation, determining the need for TA's, national and school policies and practices, and TA training. A summary of Rutherford's (2002) recommendations is presented in Appendix A. Despite a lack of research and guidelines, however, there are some encouraging signs, for example, it is now recognised that TA's need to receive professional development (Wylie, 2000, cited in Rutherford, 2002). Currently, the New Zealand Council for Educational

Research (NZCER) is evaluating a professional development programme developed for TA's in a number of New Zealand schools. The Ministry of Education funds the study and the aim is to give the Ministry and schools an understanding about the effectiveness of professional development (NZCER, 2003).

Conclusion

Through interviews with professional educators and TA's themselves, a number of concerns have been raised with regard to the effectiveness of TA's contribution to the learning outcomes of children requiring extra assistance in the classroom. These concerns include, lack of qualifications and training, performing tasks deemed inappropriate relative to TA's training and skills, holding high levels of responsibility for children's learning, maintaining excessive proximity to the child, and receiving inadequate supervision by professional staff. The literature discussed in this chapter did not refer to TA's who work with children with traumatic brain injury and the findings from these studies may not generalise to TA's who work with such children. However, given that children with TBI often require TA support, it is important to examine the their contribution along with TA's who work with children with non-brain injured related disorders. It is also important to note that the literature discussed in this chapter referred to TA's in the United States and therefore the findings may not generalise to TA's in New Zealand, however, the literature discussed here reflects my own experience of working as a TA in New Zealand. The following chapter backgrounds and explains the formulation of the current study.

CHAPTER 5

BACKGROUND OF STUDY AND FORMULATION

While most children eventually return to school following a brain injury, they may be left with physical, cognitive and social deficits that can affect their ability to take part in the normal school programme. Accordingly modifications to the learning environment and extra classroom support may be needed. Often this is achieved through TA support. As noted in earlier chapters, considerable research has been conducted regarding the role of TA's most of it has been qualitative involving interviews with TA's and professional education staff. A number of concerns regarding the role of the TA have been highlighted. It has been found that TA's may hold high levels of responsibility for a child's learning often undertaking tasks that are considered inappropriate relative to the level of training and qualifications. Generally, however, it has been reported that TA's have received little or no training prior to or during employment, do not hold formal qualifications and receive little or no supervision from the classroom teacher.

There has also been much written about the education issues surrounding a child's return to school following a brain injury. Much of the literature consists of opinion-based articles with little empirical research. Most authors agree that one of the problems surrounding a child's return to school following brain injury is educators' lack of knowledge about the effects of brain injury on learning outcomes. Most educators work with children with disorders that fall within typical special education categories, such as ADHD or developmental delay. TBI, however, is not an educational disability, but rather a medical condition which can result in impairments similar to non-brain injured children who have been diagnosed with a learning or developmental disorder. The education needs of children with TBI, however, are often more complex due to the individual variability of outcomes following brain injury. Despite the many articles written about the education of children with TBI, there is a lack of research about ways in which the education of children with TBI can be enhanced. Most of the literature consists of recommendations from authors with expertise about the effects of brain injury, however, no attempt has been made to examine the value of such recommendations. Authors have also not specifically referred to the role of the TA when working with

a child with brain injury. Yet given that TA's are often employed to work with children requiring extra assistance, the high level of responsibility TA's have been found to have, and the complex educational needs of children with TBI, it is important to consider the role of the teacher aide along with professional staff. The following section outlines the purpose and significance of the current study.

Purpose and Significance of Study

The purpose of the current study was to examine the perceptions about the role and efficacy of TA's who work with children with traumatic brain injury, in particular by examining the perceptions of TA's, parents and teachers. The overall objective was to identify problems or concerns that participants may have relating to the role of the TA. The study was also aimed to provide a foundation for future researchers to examine ways in which the effectiveness of TAs' contribution to the learning outcomes of children with TBI could be improved. It was important to examine teacher perceptions because teachers are usually responsible for the supervision of the TA with whom they work with. They may, however, not be aware of the progress the TA is making with the child concerned. Because teachers are often busy, they do not have the time to monitor the TA or the progress the child is making. Examining parents' perceptions was also important because TBI can cause great stress for the family of the child concerned. If appropriate intervention works at school, the skills acquired at school can be extended to the family's home, thus reducing stress for the parents (Savage, Russo, & Gardner, 1997). However, if appropriate methods are not being implemented at school, then it is likely that that the needs of the child with TBI are not being met, thus the child's deficits will occur at home as well as at school, posing challenges for parents. The added views of teachers and parents also clarified whether TA's need further training, direction or supervision. While the current research did not specifically examine children's achievement as the result of TA intervention, examining perceptions of TA's effectiveness provides a foundation for future research. Such research would examine specifically what TA's actually do with children with TBI and what factors enhance or inhibit children's achievement and provides a foundation for future researchers to examine how the contribution of the TA can be improved to enhance the academic outcomes for children with TBI.

Questionnaires were used to examine the perceptions of TA's, parents and teachers of children with TBI. The questionnaires examined a number of different issues. These included, TA's knowledge about the effects of brain injury, the nature of their lesson planning, their level and need for training, tasks and responsibilities of TA's, problems or concerns relating to TA's ability to perform effectively and overall performance and effectiveness of TA's. TA's, parents and teachers responses were examined for similarities and differences relating to their perceptions of the TA working with their child. Specifically, the study was aimed to answer the following questions:

How much knowledge do participants believe TA's should know about the effects of brain injury and how much do TA's know?

Should TA's consult with a brain injury expert?

What do participants believe is the best way to plan children's lessons and how do TA's plan children's lessons?

Should TA's attend IEP meetings and how often do TA's attend IEP meetings?

Do participants believe TA's have had enough training for the job and do TA's need further training in certain areas?

What tasks do participants believe TA's should perform and what tasks do TA's hold primary responsibility for?

Do participants have any concerns relating to TA's ability to perform effectively?

How effective is TA's contribution to the learning outcomes of children with TBI?

How can TA's performance be improved to enhance children's learning outcomes?

Are there any other concerns or issues with regard to the role of the TA working with a child with TBI?

CHAPTER 6

METHOD

Participants

Participants in this study were the TA's, parents and teachers of 28 children who had sustained a traumatic brain injury and who received TA support. Participants were recruited in primary and high schools in Hawke's Bay and Wellington, and through the Accident Compensation Corporation (ACC) in New Plymouth and Wellington. As shown in Table 1, a total number of 11 TA's, 13 parents and 9 teachers responded regarding 16 of the 28 children about whom responses were sought. This response rate corresponded to a total of 33 participants from a possible 85 participants. Participants and children's demographic details were unknown.

Table 1. *Responses for Sets of TA's, Parents and Teachers*

		Respondent		
	Child	TA	Parent	Teacher
	0	Yes		
		Yes		
	1	Yes		
*	2	Yes	Yes	Yes
*	3	Yes	Yes	Yes
	4		Yes	
	5	Yes		
	6		Yes	Yes
*	7	Yes	Yes	Yes
	8		Yes	Yes
	9		Yes	
*	10	Yes	Yes	Yes
*	13	Yes	Yes	Yes
	14		Yes	
*	17	Yes	Yes	Yes
	21		Yes	
*	26	Yes	Yes	Yes

Note: *= Full set

Instrument Development

Questionnaires (Appendix B) were designed to examine a number of different issues relating to the TA's role. These included, knowledge about the effects of brain injury on learning outcomes, nature of lesson planning, attendance at IEP meetings, tasks and responsibilities, job preparation and need for further training, concerns relating to TA's performance, and overall performance and effectiveness of TA's. Participants were given the same questions, however, parents did not answer question numbers, 6, 8, and 13 of the TA and teacher questionnaires, as these questions concerned the working relationship between the TA and teacher, which parents were unlikely to know. The questionnaires were also worded according to whether participants were TA's, parents, or teachers. TA and teacher questionnaires consisted of 28 items and parental questionnaires consisted of 25 items. Most were closed questions and participants were asked to tick their choice of answer. There were also two open-ended questions that allowed participants to describe ways in which the TA's contribution could be improved and to note any further thoughts or comments they had relating to the role of the TA. Questionnaires were also number coded from 0-27 to identify the TA, parent and teacher of each child.

Instrument Content

<u>Knowledge About the Effects of Brain Injury.</u>

Four questions related to TA's knowledge about the effects of brain injury on learning outcomes.

1. How important it was for the TA to know about the effects of brain injury, with a choice of five answers ranging from 'not important at all' to 'very important'.
2. Extent of knowledge the TA *should* have about the effects of brain injury with a choice of four answers ranging from 'none' to a 'lot'.
3. Extent of knowledge the TA *does* have about the effects of brain injury with a choice of four answers ranging from 'none' to a 'lot'.
4. How often the TA should consult with an expert on brain injury with a choice of four answers, including 'no need to consult with expert', 'only once', 'once in awhile', and 'regularly'.

Nature of Lesson Planning.

These questions were based on findings from French (2001) who examined the working relationship between TA's and teachers and found that few TA's and teachers worked together to plan a child's learning curriculum but more often than not, TA's were held primarily responsible for the development of a child's lesson plans. There were six questions relating to how TA's planned lessons for the child.

1. Participants were given a list of ways in which a TA could plan a child's lesson and were asked to place a tick next to the one they thought was best.
2. TA's and teachers were given the same list and asked to choose how they planned lessons for the child.
3. Participants were asked how satisfied they were with the way the TA and teacher planned lessons with answers ranging from 'not sure' to 'very satisfied'.
4. TA's and teachers were asked how much time they devoted to meetings or planning sessions.
5. Participants were asked whether they believed the amount of time devoted to meetings was adequate.
6. Participants were asked how effective the communication was between the TA and teacher with answers ranging from 'not sure' to 'very effective'.

Attendance at IEP meetings

Participants were asked whether the TA should attend IEP meetings and how often the TA attended meetings.

Training and Job Preparation

Five questions related to TA's preparation for the job and the need for further training.

1. Participants were given a list of ways in which the TA could prepare for the job and asked to choose which way they thought was best.
2. TA's and teachers were given the same list and asked to choose how the TA had prepared for the job.
3. Did the TA have enough training for the job?

4. Did the TA need further training in certain area and in which areas? Participants were given a list of potential areas of further training and were asked to place a tick next to the areas they thought the TA needed further training. These areas of training were based on the findings of French (1998) who found that TA's requested training in a number of areas.
5. Overall, did the TA have adequate training to work effectively?

Tasks and Responsibilities.

Four questions related to the tasks and responsibilities of TA's.

1. Participants were given a list of tasks and were asked to choose who they thought should be responsible for each task i.e. 'TA', 'Teacher', 'Shared' or 'Not Applicable'. The list of tasks was again derived from French (2001) who gave teachers the list and asked who was primarily responsible for them. French found that TA's performed a number of tasks without the assistance of a professional staff member. Participants were given the same list of tasks and asked who is responsible for each task.
2. Participants were also asked how appropriate the tasks were relative to the experience and skill of the TA. The choice of answers included, 'tasks are appropriate', 'some of the tasks are inappropriate', 'TA could be given more tasks', and 'not sure'.
3. How much responsibility did the TA have for the learning outcomes of the child? i.e. 'high', 'moderate', or 'low'.

Problems Relating to the Effectiveness of the TA.

Participants were given a list of problems regarding the TA's performance and were asked to tick any areas they had concerns about.

Overall Performance and Effectiveness of the TA.

Participants were asked to evaluate the overall performance of the TA, with answers ranging from 'poor' to 'very good' and were also asked to rate the overall effectiveness of the TA with answers ranging from 'not effective at all' to 'very effective'.Finally, participants were given two open-ended questions. The first

question asked participants to list ways in which they believed the TA's performance could be improved and were then invited to make further comments.

Procedure

A package of questionnaires was made up for each child. Each package contained separate envelopes for TA's, parents and teachers containing an information sheet (Appendix C), questionnaire and pre-paid return envelope. For participants recruited in schools, the researcher sent the packages to the principals who in turn distributed the material to each TA, parent and teacher of the child. At the request of the Massey University Human Ethics Committee, a consent form was also sent to principals to sign to allow recruitment of participants in the school (Appendix D). For participants recruited through ACC, the researcher sent all of the packages to an ACC case manager. The ACC case manager then addressed and posted the packages to the parents of children receiving TA assistance. Inside each package contained a letter to parents requesting they pass on the questionnaires to the TA and teacher of their child (Appendix E). In both cases, the researcher had no direct contact with children or participants, thus assuring anonymity of participants.

As stated above, participants were given an information sheet, a number coded questionnaire and freepost envelope in which to return the completed questionnaire to the School of Psychology. The information sheet described the purpose of the study; ensured participants that all information would remain confidential, and that they were not obliged to participate, and stated that the Massey University Human Ethics Committee, Wellington, had approved the study. The information sheet also stated that participants could request a summary of results should they wish. Respondents returned all completed questionnaires to the School of Psychology in Palmerston North, and were then forwarded to the researcher.

CHAPTER 7

RESULTS

Due to the small sample size, consideration of results was predominantly limited to percentages. The data was examined in three ways. Overall differences in responses between TA, parent and teacher groups were examined. Seven sets of responses each concerning one child, were examined for within set differences. Finally, two open-ended questions seeking respondents further thoughts or comments were considered qualitatively.

Group Differences

TA's knowledge about the effects of brain injury

On children's learning outcomes

With the exception of one teacher who believed that it was *somewhat* important for the TA to know about the effects of brain injury on children's learning outcomes, all 11 TA's, 13 parents and 8 teachers (89%) believed it was *important* or *very important*

Should know

Most respondents (73% TAs, 77% parents, 67% of teachers) believed that the TA should know *a lot* about the (general) effects of brain injury with the remainder considering that the TA should *have some* knowledge.

Does know

By comparison however, few respondents (1 TA, 1 parent, and 3 teachers) considered that the TA does know *a lot* about the effects of brain injury. Most respondents (10 TA's, 12 parents, 5 teachers) reported that the TA had *some* or *very little* knowledge and 1 teacher reported that the TA had *no knowledge* about brain injury.

The percentages are shown in Figure 1.

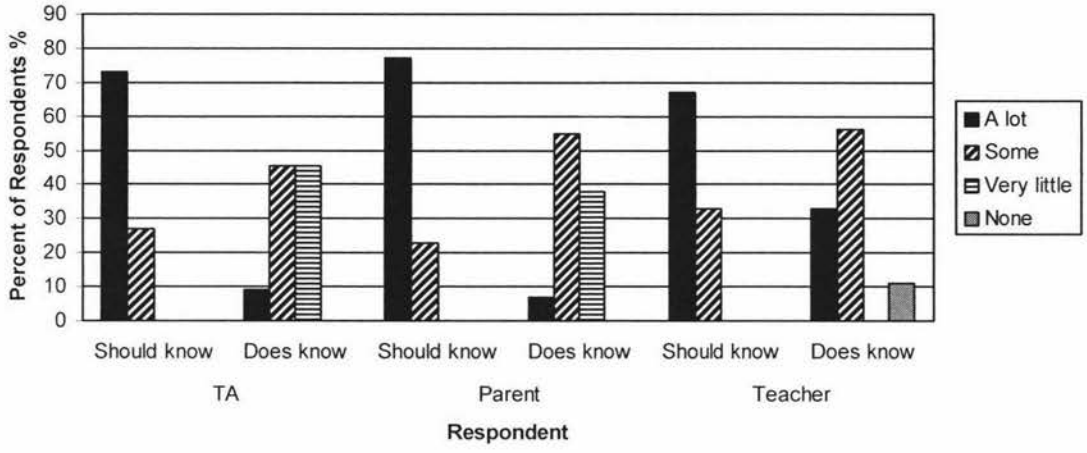

Figure 1. Amount of Knowledge TA's Should and Do Know About the Effects of Brain Injury.

The relationship between what the groups thought TA's should know and what they did know was investigated using Pearson product-moment correlation. Preliminary analyses revealed violation of the assumptions of homoscedasticity, and instead the whole group was examined using Wilcoxon Signed Rank Test. There was a significant difference between the amount of knowledge the group thought TA's should know and do know, $z(32)=3.39$, $p<.0005$. The eta-squared statistic (.28) indicated a large effect size.

TA's need to consult with an expert on brain injury

As is shown in Figure 2, an expectation for the TA to meet with a brain expert was highest for parents, and lowest for teachers. Eight parents (62%) 5 TA's (45%) and 2 teachers (22%) thought meetings should be *regularly* 6 TA's (55%) 4 parents (31%) and 3 teachers (33%) thought *once in awhile*, 1 parent and teacher *only once*, and 3 teachers (33%) thought that there was *no need* for such meetings at all.

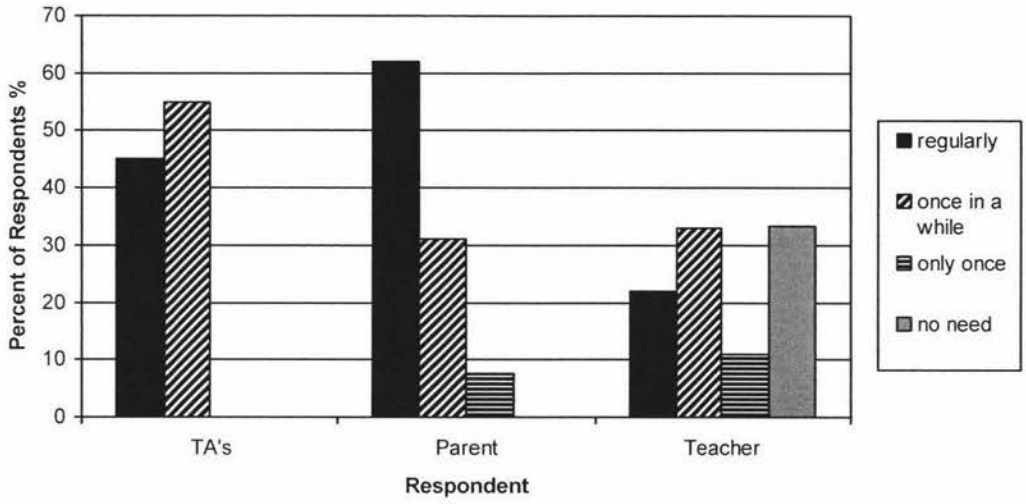

Figure 2. TA's Need to Consult with Expert

Nature of lesson planning

Should & Did Prepare

Table 2 shows the percentage of TA's, parents and teachers who reported the best way in which they believed the TA *should* prepare and *did* prepare for a lesson. Most TA's, parents and teachers believed that the TA and teacher *should* sit down together to develop a written lesson plan although few *did* so with most TA's instead receiving instructions from the teacher. No TA or parent believed TA's should plan alone or follow along and only 1 teacher believed TA's should follow along. Only 1 TA and teacher reported the TA planning alone and 1 TA and 2 teachers reported that no one plans.

Table 2. *Belief About the Best Way and How TA's Plan Children's Lessons.*

Type of lesson plan	TA %		Teacher %		Parent %
	Best	How	Best	How	Best
TA and teacher develop written plan together	64	18	45	11	84
Teacher gives oral instructions during class	18	55	22	11	8
Teacher gives oral instructions ahead of time	18	0	11	22	8
Teacher gives TA written lesson plan to follow	0	9	11	22	0
TA plans alone	0	9	0	11	0
No-one plans	0	9	11	22	0

Satisfaction with Lesson Planning

As illustrated in Figure 3, most respondents (8 TA's [73%], 9 parents [69%], and 6 teachers [67%]) were *very* satisfied or *satisfied* with the way the TA planned a child's lessons. Two parents (15%) and TA's (18%) were *not* satisfied and. 2 teachers (22%) and 2 parents (15%) were *not sure.* Two respondents (1 TA and teacher) did not enter a response for this question.

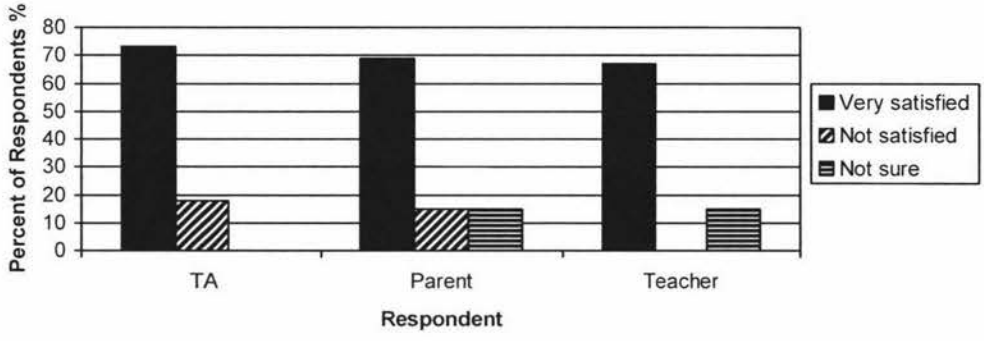

Figure 3. Satisfaction with Lesson Planning

Frequency of meetings

Most TA's (45%) and teachers (67%) reported meeting *once in awhile* for formal planning sessions. 1 TA and 2 teachers reported meeting *1-2 times a week* and 1 TA *once a month*. Only 2 TA's and 1 teacher reported meeting *everyday*. 2 TA's did not respond to this question.

As shown in Figure 4, most teachers (89%) and some TA's (55%) believed the amount of time devoted to meetings was adequate, and some TA's (36%) and very few teachers (15%) believed more time was needed. The majority of parents (70%) were not sure or believed the amount of time was adequate (30%). 1 TA did not respond to this question.

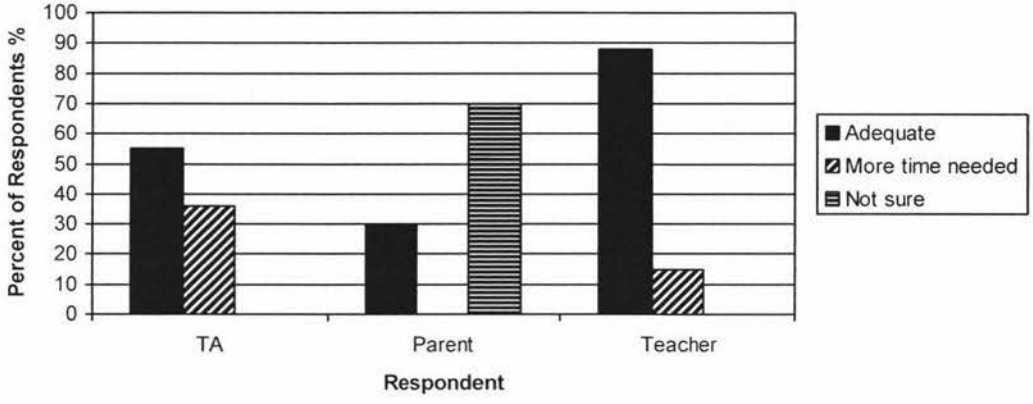

Figure 4. Amount of Time Devoted to Meetings

Efficacy of Communication

As shown in Figure 5, all teachers, 5 TA's (45%) and 4 parents (30%) believed that the communication between the TA and teacher was *very effective*, 6 parents (46%) and 2 TA's (18%) believed it to be *somewhat effective* and 2 parents (15%) and TA's (18%) that it was *not very effective*. 1 parent was not sure.

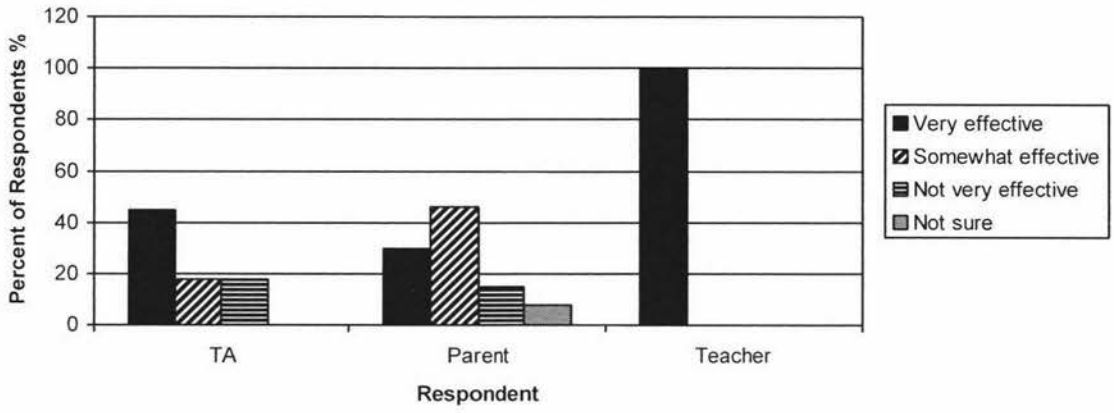

Figure 5. Efficacy of Communication Between TA and Teacher

Attendance at IEP meetings

As shown in Figure 6, all TA's, parents and teachers believed that TA's *should* attend IEP meetings and the all TA's, teachers and the majority of parents (84%) reported that TA's *did* attend such meetings. Two parents reported that the TA did not attend *any* meetings.

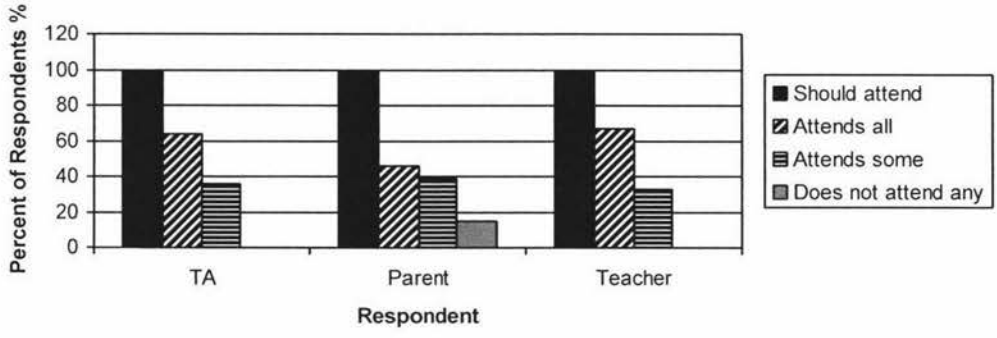

Figure 6. Attendance at IEP meetings

Job preparation and training

Figure 7 shows the types of TA training available, what participants believed was the best way to prepare for the job and how TA's prepared for the job. The majority of TA's, parents and teachers believed that TA's should undertake both a TA course and in-service training. Although a few TA's and teachers reported the TA undertaking both a TA course and in-service training, most TA's and teachers reported the TA undergoing some form of training, however, 18% of TA's and 22 % of teachers reported that the TA had not had any training but rather learned on the job.

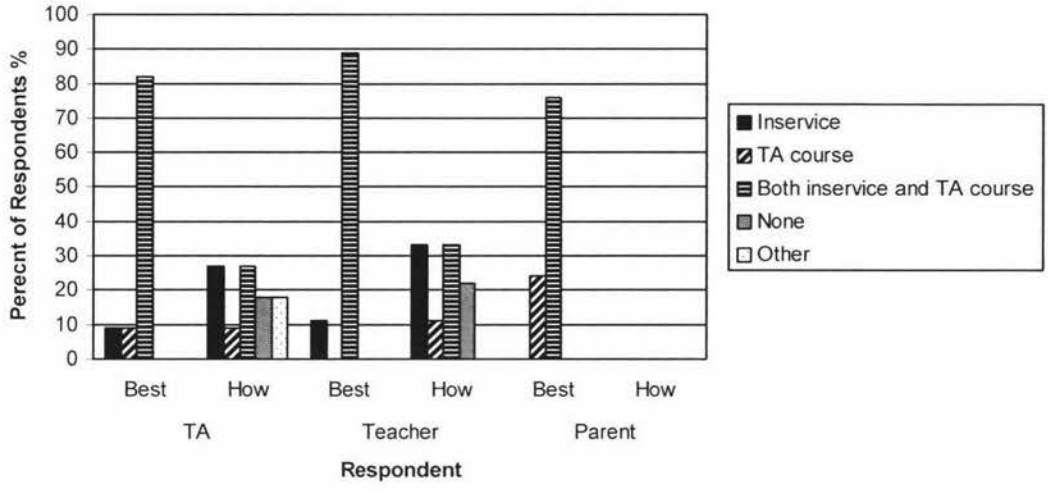

Figure 7. Belief About the Best Way to and How TA's Have Trained

Most teachers (67%), TA's (64%) and 47% of parents believed that the TA had *enough training* for the job. However 27% of TA's, 23 % of teachers and 22 % of parents believed that there was *not enough training* and 9 % of TA's, 11% of teachers and 31% of parents were *not sure*.

In spite of the above, 8 TA's (72%) and 4 teachers (45%) and 6 parents (47%) believed that the TA needed training in further areas as shown in Table 3, particularly further training in, knowledge about the effects of brain injury, teaching strategies, and communication. Teachers also reported the need for training in behaviour management.

Table 3. *Areas in which TA's Need Further Training*

Areas of training	TA n=8	Parent n=6	Teacher n=4
Knowledge about effects of brain injury	7	5	3
History of special education	2	1	0
Child development	4	1	1
Roles and responsibilities	2	2	3
Legal responsibility	2	0	2
Behaviour management	3	1	4
Teaching ideas and strategies	6	5	4
Communication	4	4	3
Health and safety	2	2	2
Other	0	1	0

Almost half of TA's (45%), over half of teachers (55%) and 38% of parents believed that TA's had *adequate preparation to work as a TA*. 55% of TA's, 45% of teachers ad 46% of parents believed that TA's *need further training in some areas* and 15% of parents were *not sure*.

Tasks and responsibilities

Tables 4 shows a list of tasks and participants' beliefs about who should be responsible. TA's, parents and teachers' responses were combined. As shown in Table 4, few respondents believed the teacher should hold primary responsibility for tasks concerning health and personal care and most reported either the TA or not applicable. Few respondents believed the TA should hold primary responsibility for tasks concerning curriculum development, teaching, report writing and consultation with parents, and most believed either the teacher should hold the most responsibility or shared responsibility by both the TA and teacher. Table 4 also shows who is responsible for each task. Most respondents reported not applicable to tasks involving health and personal care. Most respondents reported the teacher or shared responsibility for tasks concerning curriculum development, teaching, report writing and consultation with parents and few TA's held primary responsibility for these tasks.

Table 4. *Belief About Who Should Be and Who Holds Responsibility For Tasks*

	TA		Teacher		Shared		N/A	
Task	Belief n=31	Who n=17	Belief n=31	Who n=17	Belief n=31	Who n=17	Belief n=31	Who n=17
Dressing	10	2	0	0	3	1	18	14
Feeding	10	2	0	0	3	2	18	13
Toileting	11	3	0	0	3	3	17	12
Mobility	6	1	1	0	7	4	17	12
Health	5	2	3	2	11	4	12	9
Planning lessons	0	2	14	11	15	4	2	0
Determining IEP goals	0	0	6	11	25	6	0	0
Deciding behaviour management strategies	1	3	8	7	20	6	2	2
Informing parents of meetings	3	1	19	14	8	2	1	0
Maintain good relations with parents	1	0	2	7	27	10	1	0
Write progress reports	1	0	16	13	14	3	0	1

	TA		Teacher		Shared		N/A	
	Belief n=31	Who n=17	Belief n=31	Who n=17	Belief n=31	Who n=17	Belief n=31	Who n=17
Call parents about child's behaviour	4	1	18	9	7	4	2	3
Consult with professionals regarding child's problems	3	2	16	9	12	5	0	1
Attend IEP meetings	1	1	0	2	30	14	0	0

Note: N/A= Not applicable.

The majority of TA's (81%), and most parents (70%) and teachers (67%) believed the tasks TA's were given were appropriate. 18% of TA's, 15% of parents and 11 % of teachers believed some of the tasks TA's were given were inappropriate. 11% of teachers believed the TA could be given more tasks and 15% of parents and 11% of teachers were not sure.

As shown in Figure 8, most TA's (64%), and parents (62%) and 34 % of teachers believed the TA had a high level of responsibility for the child's learning outcomes. 36% of TA's, 31% of parents and 44% of teachers, a moderate level of responsibility, and no TA's, only 1 parent and 2 teachers believed TA's had a low level of responsibility.

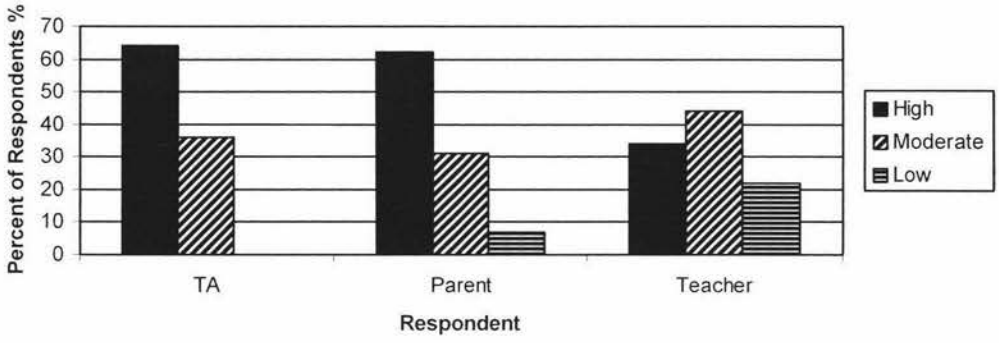

Figure 8. TA's level of Responsibility for Children's Learning Outcomes

Problems and concerns relating to TA's effectiveness

5 TA's (45%), 5 parents (38%), and 1 teacher (11%) had concerns relating to the TA's effectiveness, however, most TA's (55%), parents (62%), and the majority of teachers (89%) did not have any concerns. As shown in Table 5, the most reported areas for TA's and parents were, lack of knowledge about brain injury, inadequate guidelines and lack of qualifications. Only 1 teacher reported concerns, which were not related to this list of areas.

Table 5. *Areas of Concern Relating to TA's Effectiveness*

Areas of concern	TA n=5	Parent n=5	Teacher n=1
Lack of knowledge about the effects of brain injury	4	3	0
Lack of qualifications	3	2	0
Inadequate training	1	2	0
Inadequate guidelines provided for TA	2	5	0
Lack of skills	1	1	0
Communication problems with other staff	0	0	0
Other	0	0	1

TA's overall performance and effectiveness

100% of TA's, 70% of parents and 89% of teachers believed the TA's performance was excellent or very good. 23% of parents and 11 % of teachers, satisfactory, and only 1 parent believed the TA's performance to be poor.

Most TA's (64%), parents (62%), and teachers (67%) believed the TA to be very effective and 36% of TA's, 38% of parents, and 33% of teachers somewhat effective. No TA's, teachers or parents believed the TA was not effective.

Individual Differences

The responses of the individual TA, parent and teacher of seven children were examined to identify areas in which there were significant discrepancies in responses between the TA, parent and teacher. The following section presents the findings for each TA, parent, and teacher of the children.

Areas in which there were discrepancies in responses between TA, parent and teacher

	Child						
Areas	1	2	3	4	5	6	7
Best way the TA should plan lesson	•		•				•
Satisfaction with lesson planning		•					
Time devoted to planning lessons	•	•			•		
Areas of further training	•		•	•		•	
Responsibility for learning outcomes	•		•				
TA's overall performance	•		•				
Amount of knowledge known about brain injury		•	•			•	
Effectiveness of TA/teacher communication		•				•	
TA's overall job preparation		•		•		•	•
Appropriateness of given tasks		•				•	
Need to consult with an expert on brain injury				•		•	•
Concerns relating to the effectiveness of the TA				•		•	

Child 1

- *TA:* Teacher should give oral instructions ahead of time.
  Teacher: TA should be given instructions during class time.
  Parent: TA and teacher should develop a written lesson plan together.
- *Teacher:* Amount of time devoted to meetings was adequate.
  TA: More time was needed.
  Parent: Not sure how often the two met.

- *Teacher:* TA needed further training.
  Parent: TA did not need further training
  TA: Not sure.
- *TA and Parent:* TA had a high level of responsibility for the child's learning outcomes.
  Teacher: TA had a low level of responsibility.
- *TA and Parent:* TA's performance was excellent.
  Teacher: TA's performance was satisfactory.

Child 2

- *TA and Parent:* TA had some knowledge of brain injury.
  Teacher: TA had no knowledge of brain injury.
- *Teacher and Parent:* Satisfied or very satisfied with the way the TA planned lessons for the child.
  TA: Not satisfied with the way the TA planned lessons for the child.
- *Teacher:* Amount of time devoted to meetings was adequate.
  TA: More time was needed.
  Parent: Not sure.
- *Teacher:* Communication between TA and teacher was very effective.
  Parent: Communication between TA and teacher was somewhat effective
  TA: Communication between TA and teacher was not very effective.
- *Teacher and Parent:* TA has adequate preparation for the job.
  TA: Needs further training in some areas.
- *TA and Parent:* Tasks the TA are given were appropriate.
  TA: Some of the tasks were inappropriate in relation to the TA's levels of qualifications and skills.

Child 3

- *TA and Parent:* TA knew very little about the effects of brain injury.
  Teacher: TA knew a lot about the effects of brain injury.
- *TA and Teacher:* Teacher should give the TA instructions during class time.
  Parent: Teacher and TA should develop a written lesson plan together.

- *TA and Teacher:* TA needed training in certain areas.
  Parent: TA did not need further training.
- *Parent:* TA had a high level of responsibility for children's learning outcomes.
  TA: TA had a moderate level of responsibility.
  Teacher: TA had a low level of responsibility.
- *TA and Teacher:* TA's performance was very good.
  Parent: TA's performance was satisfactory.

Child 4

- *TA and Parent:* TA needed to consult with an expert once in awhile.
  Teacher: TA did not need to consult with an expert.
- *TA and Teacher:* TA did not need further training.
  Parent: TA needed further training.
- *TA and Teacher:* TA's and overall preparation for the job was adequate.
  Parent: TA needed further training in some areas.
- *TA and Teacher:* No concerns relating to the effectiveness of the TA.
  Parent: Had some concerns relating to the effectiveness of the TA.

Child 5

- *TA and Parent:* Amount of time devoted to meetings was adequate.
  Teacher: More time was needed.

Child 6

- *TA and Teacher:* TA should know a lot of brain injury.
  Parent: TA should know some.
- *TA and Parent:* TA knew very little about brain injury.
  Teacher: TA knew a lot about brain injury.
- *TA:* TA should consult with an expert on brain injury once in awhile.
  Parent: TA should consult with an expert on brain injury regularly.
  Teacher: TA did not need to consult with an expert.

- *Teacher:* Communication between TA and teacher was very effective.
  TA: Communication between TA and teacher was not very effective.
  Parent: Not sure.
- *Teacher and TA:* Some tasks TA is given were inappropriate.
  Parent: Tasks were appropriate.
- *Teacher and Parent:* No concerns relating to the effectiveness of the TA.
  TA: Had some concerns relating to the effectiveness of the TA.
- *TA:* TA needed further and specific training.
  Teacher: TA needed no further training.
  Parent: Not sure.
- *Teacher:* TA had adequate overall preparation for the job.
  TA and Parent: TA needed training in some areas.

Child 7

- *TA and Parent:* TA should consult with an expert on brain injury regularly.
  Teacher: TA did not need to consult with an expert.
- *Parent and Teacher:* TA and teacher should develop written lesson plan together.
  TA: Teacher should give oral instructions ahead of time.
- *TA and Teacher:* TA needed further training in some areas.
  Parent: TA's overall preparation was adequate.

Qualitative Results

Participants were asked for their views about how TA's contribution could be enhanced to improve the learning outcomes of children with TBI and to look for any concerns or issues that participants raised regarding the role of the TA. Firstly, each of the seven sets were individually examined and from these sets one set in particular stood out as a major discrepancy was found between the teacher's and parent's view of the TA. A major concern was also found regarding the teacher's knowledge about the child's brain injury. The following section presents the findings of this particular set. Following this section, participants' views about how TA's performance can be improved and concerns or issues raised by participants are presented.

The teacher and parent of a particular child appeared to have conflicting views about the performance of the TA. When asked to detail their perceptions of the TA, the teacher raised some concerns.

> *"Talking loudly while I'm teaching to the rest of the class...trying to be their buddy and this can undermine authority at times...She tries but there are times when she is a distraction in class. Spelling and educational level are very questionable."*

The parent, however, appeared to have high regard for the TA.

> *" TA does a wonderful job. Is 100% there for the student. Their working relationship is one of trust and partnership. I also have a close relationship with TA. I am also able to phone TA and talk through school concerns or issues that arise"*

A major concern was also raised with regard to the teacher's knowledge about the child's brain injury. The teacher reported that they were not aware that the child had sustained a brain injury.

> *"I was never informed until this survey that the student had a brain injury. As a part-timer I do sometimes miss vital information but I should have known."*

The TA also raised some concerns with regard to teachers' knowledge and time constraints.

> *"Teachers do not understand. They clump all students together. Do teachers have time for slower students? Do they have time to prepare notes for T/A?*
> *Aaron is Year 11. Has been in several fights. Is labelled a bad boy because he doesn't walk away from trouble"*

Ways in which TA's performance can be improved

Some TA's and parents stressed the importance of knowing about the effects of brain injury. A parent stated:

> *" Teacher aides can be more experienced with learning disabled and behavioural problem students- brain injuries are something else, so some knowledge of the effects of brain injury is important."*

Another parent stated:

> *"I feel all teacher aides should have some formal training in understanding the impact of learning following brain injury however minor, as there is a huge decline in the ability to recall information and process it on the brain-injured child. It can manifest as laziness where the child is actually unable to understand."*

A TA stated:

"More info/training i.e.: brain injury and also possible difficulties that could be experienced or be further magnified as he gets older."

Some TA's and parents also stressed the need for more input from professional staff, in particular, the teacher. A parent stated that their child was waiting for a psychological assessment to determine the child's learning needs and once the child's needs had been determined, the parent believed that the TA would need further guidance and professional help depending on the nature of the child's needs. Another parent believed that a lesson plan needed to be developed and overseen by the teacher. Some TA's also placed importance on further input from the teacher. A TA stated that the teacher should provide them with notes for each lesson. Another TA believed that more job sharing between the TA and teacher would be beneficial to the child and this TA went on further by stating:

> *"If the teacher doesn't impart knowledge and guidance on learning programmes it is hard to do a good job. TA's should not be left to 'carry' the learning programme."*

Few teachers responded to this question, however, although TA's and parents believed teachers needed to have greater input, a teacher believed that teachers should have less responsibility due to time constraints and TA's needed to have greater initiative without relying on direction from the teacher.

> *"Greater initiative-the teacher is not always available to give direction so at times like this the teacher aide needs to carry on with the programme independently."*

One teacher, however acknowledged their own and the TA's limitations and believed specialist assistance was necessary.

> *"We would both appreciate specialist help to determine the best type of learning for this child."*

Some of the TA's and parents also stressed the need for further training and parents in particular requested specific training in relation to their own child's needs.

> *"Adequate individual training specifically regarding my child's needs"*

> *"By training the T. Aide and including them in the information gathering and planning sessions and IEP's. Also giving them more information about my child."*

Concerns and issues relating to the role of the TA

An issue raised by participants concerned the TA's proximity to the child. A parent believed that the TA did not spend enough time one-to-one with their child.

> *"I feel he should be given more time one-on-one with teacher aide. But they feel that a teacher aide 'drifting' around the classroom is better so he doesn't become dependent on her or feel different from the other children. But the way things are there is not a big improvement so I think the teacher aide support he has would be better spent with one-on-one intense work. Then more could be covered."*

However, a TA believed that it was important for a child with brain injury to interact with others as much as possible.

> *"It has been important in my case to blend in with rest of the class- not to isolate the child so he feels any different to others. The child I work with hates not being part of things. It is important to allow child to have a go at things by himself but be close by to reinforce instructions- help where necessary."*

A teacher also believed that a child with brain injury needed to remain as independent as possible.

> *"Be able to stand back and let student do it. Know when you need to help or not."*

Another issue raised concerned the type of person employed to work as a TA. A parent had some concerns about the appropriateness of one of the TA's who had supported her child.

> *"So often over the last 10 years, aides have asked me what they are supposed to be doing. I know it is difficult and so often anyone is employed- i.e. this year a 5-month pregnant woman, with a toddler who she couldn't find care for. I was to find out 3 months later that this woman and child were supporting my daughter on a course at polytechnic! Needless to say I requested an immediate replacement."*

One parent also reported the individual variability in TA's performance.

> *"My child has up to 3 different T. Aides. I've focused on the one who does the most hours. Things with are O.K with this one, a second teacher aide is 'awesome', a third one is 'hopeless' and has no understanding of things and he can't stand her."*

However, other parents were satisfied with the TA's who supported their children.

> *"Our child was fortunate enough to have a teacher's aide who was very experienced (20 years) and was in her care for the primary school years following his accident."*

> *"The TA working with M is actually a qualified teacher. She has an excellent relationship with M and a lovely gentle manner."*

Although participants have stressed the importance of training, other parents stressed it was important for the TA to have the 'right' personality.

> *"S's enjoyment comes from the aide's personality, enthusiasm and sense of fun. How to you teach/train that?"*

> *"Compatibility of personality type is an important factor in determining a successful outcome. Fortunately this has been the main factor contributing to a successful outcome with teacher aide assistance."*

One final concern raised was schools amount of knowledge they received about the extent of the child's injuries and disabilities. One teacher reported that they had received very little information about the extent of the child's problems.

> *"This child came new to the school this year. Very little information was available and to date we have no specific knowledge of her disorder and capabilities."*

CHAPTER 8

DISCUSSION

The current study examined the role of TA's who work with children with TBI, specifically by examining the perspectives of parents, teachers and TA's themselves on a number of issues. The following provides a discussion of the findings of each issue, implications for future research and limitations of the current study.

Group Differences

Knowledge About the Effects of Brain Injury on Learning Outcomes

The findings of the current study showed that the majority of TA's, parents and teachers all believed it is important or very important for TA's to know about the effects of brain injury. However, the findings also showed that few TA's have a lot of knowledge and most have some or very little knowledge. These findings are consistent with brain injury literature where authors (Clark, Russman, & Orme, 1999; D'Amato & Rothlisberg, 1997; Savage, Russo, & Gardner, 1997) have stressed the importance for educators to know about how a brain injury can affect subsequent learning outcomes, however, because educators typically work with children diagnosed with disabilities that fall within typical special education categories, they are often not qualified or experienced in working with children with medical conditions. Most authors (Clark et al., 1999; D'Amato & Rothlisberg, 1997; Savage et al., 1997) agree that educators should consult with specialists, such as a neuropsychologist, particularly during the development and planning stages of the child's learning curriculum, and the findings of this study showed that most TA's, parents and teachers believed TA's should consult with a specialist regularly or once in a while. As mentioned in the introduction, children with TBI differ to that of children with disorders such as learning and behavioural disabilities as the outcomes of TBI vary for each individual and outcomes can change in severity over time and a parent emphasised this point when asked to describe ways in which the TA's performance can be improved.

Although this study did not specifically focus on teachers' knowledge about brain injury, this study did raise some concerns regarding the teachers' knowledge, as one teacher was not aware the child had sustained a brain injury, presumably the teacher believed the child had some type of learning disability. This is particularly

concerning as it is a professional staff member, most often the teacher, who is responsible for the supervision of the TA. However, in this particular case, it appeared that the TA had greater knowledge about the child's condition and the TA raised concerns about teachers' knowledge of brain injury. The TA reported the child being in a number of fights and teachers had labelled this child as a 'bad boy'; however, behavioural problems are common after a brain injury. If teachers do not have sufficient knowledge, or in this case no knowledge of the child's condition, then subsequent impairments, such as behavioural difficulties may be misinterpreted as bad behaviour or overlooked, and the appropriate interventions may not be put in place, thus inhibiting a child's chances for success on return to school. This study did not attempt to examine specifically what TA's do and do not know about brain injury, however, the findings suggest the need to further find out what TA's (and teachers) do know and what areas TA's need further training in. A study could be conducted similar to that of Farmer and Johnson-Gerard (1997) where participants were given a series of statements about brain injury and asked whether they are true or false. As well as this, the impact that brain injury specialists can have on children's learning outcomes could also be examined and whether such intervention enhances the performance of TA's.

Nature of Lesson Planning

Most TA's, parents and teachers believed the best way to plan a child's lessons was to develop a written lesson plan together with the teacher. Although few TA's did so, most received instructions from the teacher. There is much agreement in the literature that for TA's to work effectively, they require adequate supervision from the teacher (Boomer, 1980; Heller, 1997; French, 1999), and one area in which teachers can adequately supervise is to plan lessons for the TA ahead of time. Boomer recommends written lesson plans are the most effective and should cover the purpose and rationale of each lesson, the goals for the child, and how the TA will document student progress (French, 2001). French has argued that providing oral instructions to the TA is not always effective, as often instructions are hastily instructed and misunderstood. The current study, however, did not attempt to examine the exact details of teachers' instructions and given that most TA's, parents and teachers believed the communication between the TA and teacher to be effective, it appears that providing oral instructions to the TA is an efficient and effective way of planning lessons. On a positive note, however, the findings of this

study showed that no TA's or parents believed TA's should plan alone or follow along and few TA's actually reported planning alone or no one planned, and most TA's, parents and teachers appeared to be satisfied with the way the TA plans a child's lessons. These are the least desirable methods, as TA's, who have the least amount of training and experience of education personnel should not be left primarily responsible for planning a child's lesson or without instructions from a professional staff member.

Most TA's only met with the teacher once in awhile for formal planning sessions and most TA's and teachers believed the amount of time was adequate. Authors (French, 1998; 1999; 2001; NJCLD, 1999) have recommended that effective supervision should involve the teacher and TA meeting on a regular basis to monitor the everyday activities of the TA. Face-to face meetings are the most effective method in dealing with a range of issues, such as, job-specific orientation, engaging in problem solving processes, and resolving conflicts. However, studies have found that teachers are often too busy to meet with the TA regularly. (French, 1998; 2001). This study, however, did not examine time constraints as a factor in why TA's and teachers do not meet regularly.

Attendance at IEP Meetings

An IEP (Individual Education Plan) outlines a child's learning objectives for the year, details how each objective will be met and what the child has and has not achieved. Usually, an IEP meeting occurs once a term to review the child's progress, which involves consultation between the teacher, the parents and an educational psychologist. TA's are not normally required to attend and studies have found that few TA's do attend (French & Chopra, 1999, cited in, Riggs & Mueller, 2001). This study, however, found that all TA's, parents and teachers believed the TA should attend meetings and most were found to attend all or some meetings. This is an encouraging finding, as IEP meetings allow the TA to gain additional knowledge concerning the child's progress and given that teachers are often too busy to meet with the TA regularly, the IEP meetings allow both the TA and teacher to discuss any issues or concerns regarding the child's progress.

Job Preparation and Training

Most TA's, parents and teachers believed TA's should undertake both in-service training and a TA course. Much of the literature about TA's has stressed the importance of training prior to employment (Riggs, 2001; Riggs & Mueller, 2001; Giangreco & Doyle, 2002); however, numerous studies (Riggs, 2001; Riggs & Mueller, 2001; Downing, Ryndak & Clark, 2000; French, 1998) have found that TA's have not undertaken any formal training and most learn on the job. The study, however, found that most TA's have undertaken some form of training, whether it is a TA course or in-service training. This is an encouraging finding, especially given that in New Zealand there is no legislation making it compulsory for TA's to hold formal qualifications or undergo training.

Despite most TA's having undergone training, most TA's, parents and teachers believed that TA's needed further training in certain areas, in particular, knowledge about the effects of brain injury, teaching strategies, communication, and behaviour management. This finding is consistent with previous studies, such as Riggs (2001), Downing et al. (2000) and French (1998). In all three of these studies, TA's requested further training in knowledge about the child's specific abilities and how the child's disabilities affect learning, teaching methods, communication, and behaviour management. The current study validated TA's views to some extent, as parents and teachers also reported the need for training in the same areas.

Based on TA's own perceptions about which areas they feel they need further training, training programmes need to be developed incorporating these specific areas and the efficacy of such programmes should be evaluated by examining the impact training programmes have on TA's performance and children's achievement.

Tasks and Responsibilities

The findings of this study showed that most TA's, parents and teachers believed that TA's should not be primarily responsible for tasks, such as, curriculum development, behaviour management, writing progress reports and parental relations and few TA's were found to hold primary responsibility for these tasks, with most respondents reporting that responsibility is shared or lie primarily with the teacher. Most respondents reported not applicable to tasks concerning personal and health care and of the few that were applicable, most respondents reported the TA being primarily responsible. These findings are not consistent with many studies (e.g.,

Downing et al., 2000; Marks, Schrader & Levine, 1999) where TA's have reported high levels of responsibility for tasks, such as behaviour management, curriculum development and parental relations. The findings of the current study are encouraging, given that much of the TA literature has found that TA's hold primary responsibility for a number of tasks (e.g., Downing et al., 2000; Marks et al., 1999) and the findings are also consistent with the NJCLD (1999) U.S guidelines discussed earlier in chapter four, and most TA's, parents and teachers in this study believed that the tasks TA's performed were appropriate relative to TA's level of training and skills.

Despite the above, however, of some concern was that most TA's, parents and teachers in this study believed that TA's had moderate to high levels of responsibility for children's learning outcomes. This is consistent with many studies, where TA's have reported high levels of responsibility (e.g., Downing et al., 2000 Marks et al., 1999) however, teachers and parents themselves appeared to accept that the person with the least amount of training and qualifications of educational personnel had such high levels of responsibility for their child's learning outcomes. It is not clear, however, whether participants were satisfied with the TA holding such a high level of responsibility and it may also be useful to examine which specific areas TA's have higher levels of responsibility than others.

Problems and Concerns Relating to TA's Effectiveness

Most TA's, parents and teachers did not have any concerns, however, a few TA's parents and only one teacher did, with the most reported areas being, lack of knowledge about the effects of brain injury, inadequate guidelines and lack of qualifications. Downing et al. (2000) found that many TA's were concerned about whether they were adequately qualified to perform a number of tasks and much of the TA literature has emphasised the lack of guidelines available for TA's in particular concerning the lack of clearly defined roles and responsibilities and the supervisory role of the teacher (Riggs, 2001). The current study, however, did not attempt to examine what specific guidelines TA's believed they needed.

Although a few TA's and parents expressed some concerns, only one teacher did so and these concerns were not related to the specific list of areas. It may be that because teachers do not always have the time to meet regularly with the TA, they may not be aware of any problems or concerns the TA has relating to the job. It may also be that the TA does not want to bother the teacher due to time constraints. This

issue was raised by Marks et al. (1999) who found that one reason TA's assumed such high levels of responsibility was due to TA's belief that they did not want the student to be a 'bother' to the teacher, thus in order to build a positive relationship with the teacher, the TA assumed primary responsibility for the learning outcome of the student.

TA's Overall Performance and Effectiveness.

The findings of this study showed that overall TA's, parents and teachers rated TA's performance as excellent or very good, and the majority of TA's, parents and teachers believed the TA to be very effective or effective. French (1998) found that TA's rated their own performance higher than teachers, however, the current study showed that by enlarge, teachers believed the TA's performance to be just as effective as TA's themselves. However, this finding needs to be interpreted with some caution as TA's effectiveness was examined by participants' perceptions and no attempt was made to examine children's overall achievement outcomes.

Qualitative Results

Ways in Which TA's Performance Can Be Improved

As mentioned earlier, most participants believed TA's should know about the effects of brain injury on learning outcomes and this point was further emphasised by some TA's and parents when asked to describe ways in which the performance of the TA can be improved. Parents, in particular stressed the difference between brain injury and learning disabilities, and one parent acknowledged that the effects of a brain injury might be overlooked or misinterpreted as inappropriate behaviour. TA's and parents also stressed the need for more input from professional staff members, in particular, the teacher with whom the TA works with. One teacher, however, had a different view and believed that teachers do not always have the time to supervise TA's and TA's needed to have greater initiative in undertaking tasks independently. This finding is consistent with other studies. French (1998) found that teachers were reluctant to supervise TA's and most saw the TA as a peer rather than a supervisee whose job it was to provide direct instructions to the student. Other studies, however, have found that TA's have some concerns relating to their levels of qualifications and skills. Downing et al. (2000) found that that TA's believed that

they were not always the best qualified to provide direct instructions to students and Marks et al. (1999) found that TA's believed that it was more appropriate for the teacher to assume a range of responsibilities, particularly with regard to curriculum development and direct instructions.

There is much agreement in the literature that for TA's to be effective they require adequate supervision from the teacher which should include, assignment of specific tasks, holding planning meetings, designing instructional plans and monitoring the TA's daily activities (French, 2001). In New Zealand, however, because there are no guidelines regarding the use of TA's, there are also no guidelines regarding the supervisory role of the teacher. French (1999), however, has argued that as the role of the TA has changed over the years, so has that of the teacher and teachers now must take on the role as delegator, planner and director to ensure students' receive the highest quality education. The current study did not attempt to examine the supervisory methods of teachers, however, further research should examine this issue.

Some TA's and parents also stressed the need for further training, which is consistent with other studies in which TA's have requested further training (e.g., Downing et al., 2000; French, 1998). Parents in particular requested the need for the TA to have further training in areas directly related to the child's needs. Given the individual variability in outcomes following brain injury, this is not a surprising finding, as many authors have emphasised the need to consider the effects of brain injury on an individual basis. As previously mentioned, it may be that the child needs to be evaluated at regular intervals to establish any change in outcomes or the development of new deficits and as previously mentioned, a specialist, such as a neuropsychologist can provide valuable information, not just to TA's but other educational professionals.

Concerns and Issues Relating to the TA's Role

An issue raised by participants concerned the TA's proximity to the child. A parent believed that their child did not spend enough time one-on-one with the TA as the teacher believed that it would be better for the child if the TA works in the classroom at a more general level, thus allowing the child to interact with others as much as possible. The parent, however, believed that the child was not making much progress and more could be covered if the TA spent more time with the child. A TA and teacher however believed that it was important not to isolate the child from

others and to allow the child to participate independently as much as possible. The view of the TA and teacher is consistent with a study by Giangreco et al. (1997) who found by interviewing TA's, parents and teachers that excessive proximity had a detrimental effect, including, a lack of responsibility by professional staff for children's learning, separation from classmates, dependence on adults, a negative impact on peer interactions, limitations on receiving competent instructions, loss of personal control, and interference with the teaching of other students. The current study did not attempt to examine the effect of TA proximity on children's achievement, therefore the parent's belief that their child was not making significant progress could not be verified, however, Giangreco et al. have suggested a number of practices that may be considered for future policy development. These include, the need for school staff and families to reach an agreement on when students need close proximity and when proximity might be more appropriate through classmates or when to completely withdraw from close proximity to the child altogether, and training school staff about the effects caused by excessive proximity to the child.

Some parents also raised the issue concerning the type of person employed as a TA, in particular, the appropriateness of the person, the individual variability in TA's performance and the need for the TA to have the 'right' personality. Given that there are no specific requirements in becoming a TA, it is not surprising to find that some parents have raised concerns regarding both the appropriateness and performance of the TA. The child of one parent, for example, had three TA's and according to the parent all three varied in terms of performance. Another parent was dissatisfied with a pregnant woman with a child of her own supporting her daughter. However, some of the TA's who parents had high regard for were highly qualified or experienced, for example, one TA was actually a qualified teacher and another had over 20 years of experience. Although there is little mention of this in the TA literature, some parents stressed the need for the TA to have the 'right' personality, for example, one parent believed that it was impossible to train TA's in things, such as, personality, enthusiasm and sense of fun, aspects in which the parent believed contributed to their child's progress. Downing et al. (2000) found similar findings when TA's were asked to describe personal qualities needed to be a TA. TA's mentioned things such as, patience, caring, flexibility, creativity, organised, enthusiastic and sense of humour. However, it is impossible to determine what exactly is the 'right' personality although further research could examine whether

certain types of personality characteristics contribute to the learning outcomes of the child.

One final concern raised concerned a school's lack of knowledge about the extent of the child's condition as one teacher reported that the child had only recently begun attending the school and staff were not aware of the nature of the child's disabilities or capabilities. This finding appears to validate authors' (Farmer & Peterson, 1995; Clark, Russman, & Orme, 1999) suggestions concerning the need for a collaborative approach between medical and education staff before the child returns to school. While this finding does not specifically relate to the role of the TA, the schools' lack of knowledge may have an impact on the TA's effectiveness, as schools will be unable to pass on essential information to the TA regarding the extent of the child's problems.

Individual Differences

The analysis of group differences showed that overall, TA's, parents and teachers did not differ significantly regarding their view on a number of issues regarding the role of the TA. However, the analysis of the seven individual sets showed that there were some discrepancies in responses between the individual TA, parent and teacher of the seven children. One set in particular stood out, as there was a significant discrepancy between the teacher and parent's view of the TA's performance. The teacher believed the TA to be overbearing at times and a distraction in class. The teacher also raised concerns about the TA's educational level. The parent however had a close relationship with TA, believed the TA did a good job and could talk to the TA about any problems or concerns raised. This finding is not entirely surprising given that the parent does not work with the TA in the classroom and therefore may not be aware of how the TA performs in the classroom situation. Although it may appear to the parent that the TA has sufficient knowledge of the effects of the child's brain injury, and is able to discuss issues relating to brain injury with the parent, the teacher may be in a better position to evaluate the overall performance of the TA, particularly with regard to the TA's teaching strategies and the ability to interact with the child effectively. The teacher raised particular concerns relating to the interaction of and proximity to the child, and the TA's educational level which are concerns that have been raised by previous researchers (Giangreco et al., 1997; Giangreco & Doyle, 2002; Marks et al., 1999),

however, they are concerns which parents may be unlikely to know given they do not work with the TA on a daily on-to-one basis.

There were also discrepancies between individual TA's, teachers and parents of each child in a number of areas and these may be explained by parents' lack of knowledge about the TA's performance in a classroom situation or by teachers' lack of understanding regarding the needs of TA's due to time constraints. TA's and teachers of two sets believed the best way to plan lessons was for the teacher to give oral instructions, however, the parent believed the TA and teacher should develop a written lesson plan together. This discrepancy might be explained by the fact that the TA and teacher plan lesson in this way and the two believe it to be the most effective for them, however, the parent may be unlikely to know this. Other discrepancies, such as satisfaction with lesson planning, time devoted to meetings, communication between the TA and teacher and the amount of knowledge the TA does know about brain injury, may be due to the teacher's lack of understanding regarding the TA's needs, especially given that most TA's and teachers only met once in awhile. The teacher for, example, may not be aware that the TA was not satisfied with the nature of lesson planning or they may not be aware that the TA wanted to devote more time to meetings.

The findings of the analyses of the individual sets suggests that perhaps teachers are in a better position than parents to evaluate the TA's performance in areas, such as the TA's ability to interact effectively with the child and the TA's teaching skills, given that the two work closely together in the classroom situation. However due to time constraints, the teacher may not be aware of the needs of TA's, particularly with regard to training and additional consultation with professional staff and they may not be likely to know how much knowledge the TA does have about the effects of brain injury especially given that TA's are often 'thrown' into the job without prior consultation with professional staff.

Summary of Findings

- The majority of respondents believed it was important or very important for the TA to know about the effects of brain injury.
- The majority of respondents believed the TA should know a lot about brain injury, however, few did so, with most TA's having some or very little knowledge.
- The majority of respondents believed the TA should consult with an expert on brain injury regularly or once in awhile.
- The majority of respondents believed the TA and teacher should develop a written lesson plan together and although few did so, most TA's received instructions from the teacher.
- Most respondents were satisfied with the way the TA planned lessons.
- Most TA's and teachers reported meeting once in awhile for formal planning sessions, and most TA's and teachers believed the amount of time was adequate.
- Most respondents believed the communication between the TA and teacher was very or somewhat effective.
- All respondents believed that the TA should attend IEP meetings and the majority of TA's attended all or some meetings.
- The majority of respondents believed the TA should undertake both a TA course and in-service training and most TA's had undertaken some form of training.
- Although most respondents believed the TA had enough training, some believed the TA needed further training in some areas, particularly, knowledge about the effects of brain injury, teaching strategies, communication and behaviour management.
- The majority of respondents believed that primary responsibility for tasks concerning curriculum development, consultation with parents, behaviour management and writing progress reports should lie with the teacher or shared responsibility and few TA's were found to hold primary responsibility for these tasks.
- The majority of respondents believed the tasks the TA was given were appropriate.

- The majority of respondents believed the TA had a moderate to high level of responsibility for the child's learning outcomes.
- Some respondents had concerns relating to the TA's performance, particularly lack of knowledge about brain injury, inadequate guidelines and lack of qualifications.
- The majority of respondents believed the TA's performance to be very good or excellent and most believed the TA was effective or very effective.
- Some respondents stressed the need for further knowledge about the effects of brain injury, additional input from a professional staff member, and further training, particularly related to the needs of the individual child.
- Additional issues raised were, the TA's proximity to the child, the type of person employed as a TA and schools' lack of knowledge about the extent of the child's problems.

Implications for Future Research and Practice

- Examine specifically what TA's do and do not know about the effects of brain injury, for example by giving TA's a series of statements and asking whether each statement is true or false.
- Evaluate the effectiveness of input from a brain injury expert, such as a neuropsychologist.
- Examine the specific details of TA and teachers' lesson plans.
- Develop training programmes based on areas in which TA's believe they need further training in and evaluate the effectiveness of such programmes on TA performance and children's achievement.
- Examine specific areas in which TA's have high levels of responsibility and examine TA's, parents and teachers satisfaction with such high levels of responsibility.
- Examine the effects of TA's proximity to children on achievement outcomes.
- Develop policies concerning the employment and effective utilisation of TA's, specifically, by clearly defining the TA's roles and responsibilities and job description, and consider developing legislation making it compulsory for TA's to hold formal qualifications or undergo extensive training prior to employment.
- Examine the teacher's role as a supervisor and develop guidelines clearly defining the teacher's supervisory responsibilities.
- Schools should consider a collaborative approach when assessing the child's needs prior to the child's return to school, including obtaining information from medical staff about the extent of the child's condition and consulting a neuropsychologist during the assessment phase.
- Examine the effectiveness of TA's on children's achievement outcomes.

Limitations of Current Study

It was outside the scope of this study to examine children's academic outcomes as a result of TA assistance. Therefore conclusions cannot be made about the effect TA's have on children's achievement based on the findings from this study. Also outside the scope of this study was a specific examination of what TA's do to enhance or inhibit the academic performance of children with TBI.

A small sample was used; therefore, the findings from this study may not generalise to a larger TA population. This study only examined the role of TA's who work with brain-injured children and the findings from this study may not apply to TA's who work with children with non-brain-injured related disorders.

Conclusion

Despite some discrepancies in responses between individual TA's, teachers and parents of some children and issues raised from the qualitative analysis, overall, the group analysis showed that TA's, parents and teachers did not differ significantly on a number of issues and, by enlarge, the findings of the current study are encouraging, in particular, with regard to the tasks TA's perform, TA's attendance at IEP meetings, the fact that most TA's reported some form of training, and the overall performance and effectiveness of TA's. This is despite the TA literature, where it has been found that TA's have high levels of responsibility for a range of tasks, do not attend IEP meetings, and do not undertake training or hold any formal qualifications, however, the results need to be interpreted with some caution due to the small sample size and the fact that the findings are based on participants' perceptions, rather than children's achievement outcomes. One of the aims of this study was to examine ways in which the role of the TA can be improved and the most significant finding appears to be the need for TA's to increase their knowledge of the effects of brain injury. This was stressed by the majority of respondents when asked how much the TA should and does know, what areas the TA needed further training in, and in the qualitative section where some parents and TA's stated that further knowledge would improve the TA's performance. The current study did not reveal any significant problems or concerns regarding TA's effectiveness, apart from one teacher who raised some concerns, however one major concerning finding did not relate to TA's role but rather teachers' knowledge about brain injury, particularly

one teacher who was not aware the child had sustained a brain injury. This suggests the need to further consider, not only the TA's role with TBI children, but also professional educators. There are some limitations to the current study, particularly with regard to the small sample size; however, this study does provide a foundation for further research, particularly with regard to the TA's effectiveness on children's overall achievement outcomes and the impact brain injury experts and other professional staff have on TA's performance.

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Appendix A

Rutherford's (2002) Summary of Recommendations

SUMMARY OF RECOMMENDATIONS

Legal considerations

- Training and supervision of TA's becomes a legal requirement so all students are supported by appropriately trained personnel.

Determining the need for teacher aides

- Ministry of Education considers developing a protocol for sound decision-making processes regarding the employment of TA's, based on research-based practice.

Teacher aide training

- Government/Ministry of Education explores the possibility of developing a more systematic approach to professional and career development for TA's.
- Government considers the current situation regarding training providers and consider TA training be delivered by teacher training providers.
- Government/Ministry of Education explore ways of financially assisting TA's to undertake training opportunities to enable them to work safely and competently with students, e.g. school professional development funding, scholarships or incentive grants.

Policies and practices

- Ministry of Education develops a national database of TA's to inform of the development of legislation, policy and practice.
- Ministry of Education investigates the development of core TA competencies, based on sound guiding principles, and develop a code of ethics to promote consistency of training and employment standards in New Zealand.

- All personnel working in educational settings be required to undergo police screening and reference checks prior to employment. Enforce a minimum qualification standard for TA's.
- Roles and responsibilities for TA's and teachers be clarified at a national level to ensure consistency of safe and sound practice in teaching.
- Ministry of Education recognises the additional time and energy involved in supervising and evaluating the work of TA's by providing support for teachers, such as, financial compensation.
- Broaden existing pools of relieving teachers to include TA's
- Pilot project be developed to plan, implement, and evaluate a range of initiatives designed to address issues relating to the employment and training of TA's.

Source: Rutherford, G. (2002). Getting a Fair Go? Issues and Practices Regarding Teacher Aide Support of Students with Learning Disabilities. Dunedin, New Zealand: Dunedin College of Education.

Appendix B
Teacher Aide Questionnaires

(Teacher Aide)

TEACHER AIDE QUESTIONNAIRE

This questionnaire examines your perceptions about your role as a teacher aide working with a child with traumatic brain injury. Please answer the following questions by placing a tick in the box next to your choice of answer.

1. How important it is for you to know about the effects of a brain injury on learning outcomes?

Very important	□ (5)
Important	□ (4)
Somewhat important	□ (3)
Not very important	□ (2)
Not important at all	□ (1)

2. How much should you know about the effects of a brain injury on learning outcomes?

A lot	□ (4)
Some	□ (3)
Very little	□ (2)
None	□ (1)

3. How much do you know about the effects of brain injury on learning outcomes?

A lot	□ (4)
Some	□ (3)
Very little	□ (2)
None	□ (1)

4. How often do you consider that you should consult with an expert on brain injury. E.g.: Neuropsychologist, Speech therapist?

Regularly	□ (4)
Once in a while	□ (3)
Only once	□ (2)
No need to consult with expert	□ (1)

5. Which of the following do you feel is the best way to plan lessons?

Classroom teacher and I sit down together and write out a written lesson plan	□ (6)
Classroom teacher gives oral instructions to me during class time	□ (5)
Classroom teacher gives oral instructions to me ahead of time	□ (4)
Classroom teacher gives me written lessons to follow	□ (3)
I plan alone	□ (2)
No one plans- I follow along	□ (1)

6. How do you plan lessons for the child?

Classroom teacher and I sit down together and write out a written lesson plan	□ (6)
Classroom teacher gives oral instructions to me during class time	□ (5)
Classroom teacher gives oral instructions me ahead of time	□ (4)
Classroom teacher gives me written lessons to follow	□ (3)
I plan alone	□ (2)
No one plans-I follow along	□ (1)

7. How satisfied are you with the way you plan lessons for the child?

Very satisfied	□ (5)
Satisfied	□ (4)
Not satisfied	□ (3)
Definitely not satisfied	□ (2)
Not sure	□ (1)

8. How much time do you and the teacher devote to formal meetings and/or planning sessions?

Everyday	□ (6)
3-4 times a week	□ (5)
1-2 times a week	□ (4)
Once a month	□ (3)
Once in a while	□ (2)
Never	□ (1)

9. What are your thoughts about the amount of time you and the classroom teacher devote to formal meetings or planning sessions?

The amount of time is adequate	□ (3)
Teacher and I need to devote more time to formal meetings	□ (2)
Teacher and I devote too much time to formal meetings	□ (1)

10. How effective do you feel the communication is between you and the classroom teacher?

Very effective	□ (5)
Somewhat effective	□ (4)
Not very effective	□ (3)
Very poor	□ (2)
Not sure	□ (1)

11. Do you feel you should attend IEP meetings regularly?

Yes	□ (2)
No	□ (1)

12. How often do you attend IEP meetings?

Attend all meetings	□ (3)
Attend some meetings	□ (2)
Do not attend meetings	□ (1)

13. How have you prepared for the job as a teacher aide?

In-service training	□ (5)
Teacher aide course or equivalent	□ (4)
Both in-service training and teacher aide course	□ (3)
None-I learn on the job	□ (2)
Other (Please State)	□ (1)

14. What do you think is the best way to prepare for the job as teacher aide?

In-service training	□ (5)
Teacher aide course or equivalent	□ (4)
Both in-service training and teacher aide course	□ (3)
None-Best way is to learn on the job	□ (2)
Other (Please State)	□ (1)

15. Do you feel you have had enough training for the job?

Yes	□ (3)
No	□ (2)
Not sure	□ (1)

16. Do you feel you need training in certain areas?

Yes	□ (3)
No (go to question 18)	□ (2)
Not sure (go to question 18)	□ (1)

17. If yes, which areas (you can tick more than 1)

Knowledge about the effects of brain injury on educational outcomes	□ (10)
History of special education	□ (9)
Child development	□ (8)
Roles and responsibilities	□ (7)
Legal responsibility	□ (6)
Behaviour management	□ (5)
Teaching strategies and ideas	□ (4)
Communication	□ (3)
Health and safety	□ (2)
Other (Please State)	□ (1)

18. Please indicate who you think should be responsible for the following tasks

	Teacher Aide	Teacher	Shared	Not Applicable
Dressing	☐	☐	☐	☐
Feeding	☐	☐	☐	☐
Toileting	☐	☐	☐	☐
Mobility	☐	☐	☐	☐
Health needs	☐	☐	☐	☐
Planning lessons	☐	☐	☐	☐
Determining IEP goals	☐	☐	☐	☐
Deciding behaviour management strategies	☐	☐	☐	☐
Informing parents of meetings	☐	☐	☐	☐
Maintain good relations with parents	☐	☐	☐	☐
Write progress reports	☐	☐	☐	☐
Call parents about child's behaviour	☐	☐	☐	☐
Consult with other professionals regarding problems	☐	☐	☐	☐
Attend IEP meetings	☐	☐	☐	☐

19. Please indicate who is responsible for the following tasks

	Teacher Aide	Teacher	Shared	Not Applicable
Dressing	☐	☐	☐	☐
Feeding	☐	☐	☐	☐
Toileting	☐	☐	☐	☐
Mobility	☐	☐	☐	☐
Health needs	☐	☐	☐	☐
Planning lessons	☐	☐	☐	☐
Determining IEP goals	☐	☐	☐	☐
Deciding behaviour management strategies	☐	☐	☐	☐
Informing parents of meetings	☐	☐	☐	☐
Maintain good relations with parents	☐	☐	☐	☐
Write progress reports	☐	☐	☐	☐
Call parents about child's behaviour	☐	☐	☐	☐
Consult with other professionals regarding problems	☐	☐	☐	☐
Attend IEP meetings	☐	☐	☐	☐

20. In terms of my overall preparation to do my job effectively I feel that I:

Have adequate training and skills to work effectively ☐ (4)
Need further training and skills in some areas ☐ (3)
Need further training and skills in all areas ☐ (2)
Not sure ☐ (1)

21. How appropriate to your skills and training are the tasks that you are required to do?

Tasks are appropriate ☐ (4)
Some of the tasks are inappropriate ☐ (3)
I could be given more tasks ☐ (2)
Not sure ☐ (1)

22. How much responsibility do you feel you have for the learning outcomes of the child?

A high level of responsibility	□ (3)
A moderate level of responsibility	□ (2)
A low level of responsibility	□ (1)

23. Do you have any problems or concerns relating to your ability to do your job effectively?

Yes	□ (2)
No (go to question 25)	□ (1)

24. If yes, what are your concerns: (you can tick more than 1)

Lack of knowledge about the effects of brain injury	□ (7)
Lack of qualifications	□ (6)
Inadequate training	□ (5)
Inadequate guidelines provided by professional staff	□ (4)
Lack of skills	□ (3)
Communication problems with other staff	□ (2)
Other (Please State)	□ (1)

25. I consider that my overall performance is:

Excellent	□ (5)
Very good	□ (4)
Good	□ (3)
Satisfactory	□ (2)
Poor	□ (1)

26. How effective is your contribution to the educational outcomes of the child?

Very effective	□ (4)
Somewhat effective	□ (3)
Not very effective	□ (2)
Not effective at all	□ (1)

27. Please list ways in which you feel your contribution to the child's learning outcomes could be improved.

28. Please detail any further comments or thoughts you have relating to your perceptions as a teacher aide working with a child with traumatic brain injury.

(Parent)

TEACHER AIDE QUESTIONNAIRE

This questionnaire examines your perceptions about the role of the teacher aide working with your child. Please answer the following questions by placing a tick in the box next to your choice of answer.

1. How important is it for the teacher aide to know about the effects of a brain injury on learning outcomes?

   Very important □ (5)
   Important □ (4)
   Somewhat important □ (3)
   Not very important □ (2)
   Not important at all □ (1)

2. How much should the teacher aide know about the effects of a brain injury on learning outcomes?

   A lot □ (4)
   Some □ (3)
   Very little □ (2)
   None □ (1)

3. How much does the teacher aide know about the effects of brain injury on learning outcomes?

   A lot □ (4)
   Some □ (3)
   Very little □ (2)
   None □ (1)

4. How often do you consider that the teacher aide should consult with an expert on brain injury. E.g.: Neuropsychologist, Speech therapist?

   Regularly □ (4)
   Once in a while □ (3)
   Only once □ (2)
   No need to consult with expert □ (1)

5. Which of the following do you feel is the best way to plan lessons?

   Teacher aide and classroom teacher sit down together and write out a written lesson plan □ (6)
   Classroom teacher gives oral instructions to teacher aide during class time □ (5)
   Classroom teacher gives oral instructions to teacher aide ahead of time □ (4)
   Classroom teacher gives teacher aide written lessons to follow □ (3)
   Teacher aide plans alone □ (2)
   No one plans- Teacher aide follows along □ (1)

6. How satisfied are you with the way the teacher aide plans lessons for your child?

Very satisfied	□ (5)
Satisfied	□ (4)
Not satisfied	□ (3)
Definitely not satisfied	□ (2)
Not sure	□ (1)

7. What are your thoughts about the amount of time the teacher aide and classroom teacher devote to formal meetings or planning sessions?

The amount of time is adequate	□ (4)
Teacher aide and teacher need to devote more time to formal meetings	□ (3)
Teacher aide and teacher devote too much time to formal meetings	□ (2)
Not sure how often teacher aide and teacher meet	□ (1)

8. How effective do you feel the communication is between the teacher aide and classroom teacher?

Very effective	□ (5)
Somewhat effective	□ (4)
Not very effective	□ (3)
Very poor	□ (2)
Not sure	□ (1)

9. Do you feel the teacher aide should attend IEP meetings regularly?

Yes	□ (2)
No	□ (1)

10. How often does the teacher aide attend IEP meetings?

Attends all meetings	□ (3)
Attends some meetings	□ (2)
Does not attend meetings	□ (1)

11. What do you think is the best way to prepare for the job as teacher aide?

In-service training	□ (5)
Teacher aide course or equivalent	□ (4)
Both in-service training and teacher aide course	□ (3)
None-Best way is to learn on the job	□ (2)
Other (Please state)	□ (1)

12. Do you feel the teacher aide has had enough training for the job?

Yes	□ (3)
No	□ (2)
Not sure	□ (1)

13. Do you feel the teacher aide needs training in certain areas?

Yes	□ (3)
No (go to question 15)	□ (2)
Not sure (go to question 15)	□ (1)

14. If yes, which areas (you can tick more than 1)

Knowledge about the effects of brain injury on educational outcomes	□ (10)
History of special education	□ (9)
Child development	□ (8)
Roles and responsibilities	□ (7)
Legal responsibility	□ (6)
Behaviour management	□ (5)
Teaching strategies and ideas	□ (4)
Communication	□ (3)
Health and safety	□ (2)
Other (Please state)	□ (1)

15. Please indicate who you think should be responsible for the following tasks

	Teacher Aide	Teacher	Shared	Not Applicable
Dressing	□	□	□	□
Feeding	□	□	□	□
Toileting	□	□	□	□
Mobility	□	□	□	□
Health needs	□	□	□	□
Planning lessons	□	□	□	□
Determining IEP goals	□	□	□	□
Deciding behaviour management strategies	□	□	□	□
Informing parents of meetings	□	□	□	□
Maintain good relations with parents	□	□	□	□
Write progress reports	□	□	□	□
Call parents about child's behaviour	□	□	□	□
Consult with other professionals regarding problems	□	□	□	□
Attend IEP meetings	□	□	□	□

16. Please indicate who is responsible for the following tasks

	Teacher Aide	Teacher	Shared	Not Applicable
Dressing	☐	☐	☐	☐
Feeding	☐	☐	☐	☐
Toileting	☐	☐	☐	☐
Mobility	☐	☐	☐	☐
Health needs	☐	☐	☐	☐
Planning lessons	☐	☐	☐	☐
Determining IEP goals	☐	☐	☐	☐
Deciding behaviour management strategies	☐	☐	☐	☐
Informing parents of meetings	☐	☐	☐	☐
Maintain good relations with parents	☐	☐	☐	☐
Write progress reports	☐	☐	☐	☐
Call parents about child's behaviour	☐	☐	☐	☐
Consult with other professionals regarding problems	☐	☐	☐	☐
Attend IEP meetings	☐	☐	☐	☐

17. In terms of the teacher aide's overall preparation to do the job effectively, the teacher aide has:

Adequate training and skills to work effectively as a teacher aide	☐ (4)
Needs further training and skills in some areas	☐ (3)
Needs further training and skills in all areas	☐ (2)
Not sure	☐ (1)

18. How appropriate to the teacher aide's skills and training are the tasks that the teacher aide is required to do?

Tasks are appropriate	□ (4)
Some of the tasks are inappropriate	□ (3)
Teacher aide could be given more tasks	□ (2)
Not sure	□ (1)

19. How much responsibility do you feel the teacher aide has for the learning outcomes of your child?

A high level of responsibility	□ (3)
A moderate level of responsibility	□ (2)
A low level of responsibility	□ (1)

20. Do you have any problems or concerns relating to the teacher aide's ability to do their job effectively?

Yes	□ (2)
No (go to question 22)	□ (1)

21. If yes, what are your concerns: (you can tick more than 1)

Lack of knowledge about the effects of brain injury	□ (7)
Lack of qualifications	□ (6)
Inadequate training	□ (5)
Inadequate guidelines provided for teacher aide	□ (4)
Lack of skills	□ (3)
Communication problems with other staff	□ (2)
Other (Please State)	□ (1)

22. I feel the teacher aide's performance is:

Excellent	□ (5)
Very good	□ (4)
Good	□ (3)
Satisfactory	□ (2)
Poor	□ (1)

23. How effective is the contribution of the teacher aide to the educational outcomes of your child?

Very effective	□ (4)
Somewhat effective	□ (3)
Not very effective	□ (2)
Not effective at all	□ (1)

24. Please list ways in which you feel the teacher aide's contribution to your child's learning outcomes could be improved.

25. Please detail any further comments or thoughts you have relating to your perceptions of the teacher aide working with your child.

(Teacher)

TEACHER AIDE QUESTIONNAIRE

This questionnaire examines your perceptions about the role of the teacher aide working in your class with a child with traumatic brain injury. Please answer the following questions by placing a tick in the box next to your choice of answer.

1. How important is it for the teacher aide to know about the effects of a brain injury on learning outcomes?

Very important	□ (5)
Important	□ (4)
Somewhat important	□ (3)
Not very important	□ (2)
Not important at all	□ (1)

2. How much should the teacher aide know about the effects of a brain injury on learning outcomes?

A lot	□ (4)
Some	□ (3)
Very little	□ (2)
None	□ (1)

3. How much does the teacher aide know about the effects of brain injury on learning outcomes?

A lot	□ (4)
Some	□ (3)
Very little	□ (2)
None	□ (1)

4. How often do you consider that the teacher aide should consult with an expert on brain injury. E.g.: Neuropsychologist, Speech therapist?

Regularly	□ (4)
Once in a while	□ (3)
Only once	□ (2)
No need to consult with expert	□ (1)

5. Which of the following do you feel is the best way to plan lessons?

The teacher aide and I sit down together and write out a written lesson plan	□ (6)
I give oral instructions to the teacher aide during class time	□ (5)
I give oral instructions to the teacher aide ahead of time	□ (4)
I give written plans to the teacher aide to follow	□ (3)
Teacher aide plans alone	□ (2)
No one plans-Teacher aide follows along	□ (1)

6. How do you and the teacher aide plan lessons for the child?

The teacher aide and I sit down together and write out a written lesson plan	□ (6)
I give oral instructions to the teacher aide during class time	□ (5)
I give oral instructions to the teacher aide ahead of time	□ (4)
I give written plans to the teacher aide to follow	□ (3)
Teacher aide plans alone	□ (2)
No one plans-Teacher aide follows along	□ (1)

7. How satisfied are you with the way the teacher aide plans lessons for your child?

Very satisfied	□ (5)
Satisfied	□ (4)
Not satisfied	□ (3)
Definitely not satisfied	□ (2)
Not sure	□ (1)

8. How much time do you and the teacher aide devote to formal meetings and/or planning sessions?

Everyday	□ (6)
3-4 times a week	□ (5)
1-2 times a week	□ (4)
Once a month	□ (3)
Once in a while	□ (2)
Never	□ (1)

9. What are your thoughts about the amount of time you and the teacher aide devote to formal meetings or planning sessions?

The amount of time is adequate	□ (3)
Teacher aide and I need to devote more time to formal meetings	□ (2)
Teacher aide and I devote too much time to formal meetings	□ (1)

10. How effective do you feel the communication is between you and the teacher aide?

Very effective	□ (5)
Somewhat effective	□ (4)
Not very effective	□ (3)
Very poor	□ (2)
Not sure	□ (1)

11. Do you feel the teacher aide should attend IEP meetings regularly?

Yes	□ (2)
No	□ (1)

12. How often does the teacher aide attend IEP meetings?

Attends all meetings	□ (3)
Attends some meetings	□ (2)
Does not attend meetings	□ (1)

13. How has the teacher aide prepared for the job as teacher aide?

In-service training	□ (5)
Teacher aide course or equivalent	□ (4)
Both in-service training and teacher aide course	□ (3)
None- learned on the job	□ (2)
Other (Please state)	□ (1)

14. What do you think is the best way to prepare for the job as teacher aide?

In-service training	□ (5)
Teacher aide course or equivalent	□ (4)
Both in-service training and teacher aide course	□ (3)
None-Best way is to learn on the job	□ (2)
Other (Please state)	□ (1)

15. Do you feel the teacher aide has had enough training for the job?

Yes	□ (3)
No	□ (2)
Not sure	□ (1)

16. Do you feel the teacher aide needs training in certain areas?

Yes	□ (3)
No (go to question 18)	□ (2)
Not sure (go to question 18)	□ (1)

17. If yes, which areas (you can tick more than 1)

Knowledge about the effects of brain injury on educational outcomes	□ (10)
History of special education	□ (9)
Child development	□ (8)
Roles and responsibilities	□ (7)
Legal responsibility	□ (6)
Behaviour management	□ (5)
Teaching strategies and ideas	□ (4)
Communication	□ (3)
Health and safety	□ (2)
Other (Please state)	□ (1)

18. Please indicate who you think should be responsible for the following tasks

	Teacher Aide	Teacher	Shared	Not Applicable
Dressing	☐	☐	☐	☐
Feeding	☐	☐	☐	☐
Toileting	☐	☐	☐	☐
Mobility	☐	☐	☐	☐
Health needs	☐	☐	☐	☐
Planning lessons	☐	☐	☐	☐
Determining IEP goals	☐	☐	☐	☐
Deciding behaviour management strategies	☐	☐	☐	☐
Informing parents of meetings	☐	☐	☐	☐
Maintain good relations with parents	☐	☐	☐	☐
Write progress reports	☐	☐	☐	☐
Call parents about child's behaviour	☐	☐	☐	☐
Consult with other professionals regarding problems	☐	☐	☐	☐
Attend IEP meetings	☐	☐	☐	☐

19. Please indicate who is responsible for the following tasks

	Teacher Aide	Teacher	Shared	Not Applicable
Dressing	□	□	□	□
Feeding	□	□	□	□
Toileting	□	□	□	□
Mobility	□	□	□	□
Health needs	□	□	□	□
Planning lessons	□	□	□	□
Determining IEP goals	□	□	□	□
Deciding behaviour management strategies	□	□	□	□
Informing parents of meetings	□	□	□	□
Maintain good relations with parents	□	□	□	□
Write progress reports	□	□	□	□
Call parents about child's behaviour	□	□	□	□
Consult with other professionals regarding problems	□	□	□	□
Attend IEP meetings	□	□	□	□

20. In terms of the teacher aide's overall preparation to do her/his job effectively I feel that the teacher aide:

Has adequate training and skills to work effectively	□ (4)
Needs further training and skills in some areas	□ (3)
Needs further training and skills in all areas	□ (2)
Not sure	□ (1)

21. How appropriate to the teacher aide's skills and training are the tasks that the teacher aide is required to do?

Tasks are appropriate	□ (4)
Some of the tasks are inappropriate	□ (3)
Teacher aide could be given more tasks	□ (2)
Not sure	□ (1)

22. How much responsibility do you feel the teacher aide has for the learning outcomes of the child?

A high level of responsibility	□ (3)
A moderate level of responsibility	□ (2)
A low level of responsibility	□ (1)

23. Do you have any problems or concerns relating to the teacher aide's ability to do their job effectively?

Yes	□ (2)
No (go to question 25)	□ (1)

24. If yes, what are your concerns: (you can tick more than 1)

Lack of knowledge about the effects of brain injury	□ (7)
Lack of qualifications	□ (6)
Inadequate training	□ (5)
Inadequate guidelines provided for teacher aide	□ (4)
Lack of skills	□ (3)
Communication problems with other staff	□ (2)
Other (Please state)	□ (1)

25. I feel the teacher aide's overall performance is:

Excellent	□ (5)
Very good	□ (4)
Good	□ (3)
Satisfactory	□ (2)
Poor	□ (1)

26. How effective is the teacher aide's contribution to the educational outcomes of the child?

Very effective	□ (4)
Somewhat effective	□ (3)
Not very effective	□ (2)
Not effective at all	□ (1)

27. Please list ways in which you feel the teacher aide's contribution to the child's learning outcomes could be improved.

28. Please detail any further comments or thoughts relating to your perceptions of the teacher aide working with a child with traumatic brain injury.

Appendix C
Information Sheets

Massey University

Wellington Campus
Private Box 756,
Wellington,
New Zealand
Telephone: 64 4 801 2794
Facsimile: 64 6 801 2692

AN EXAMINATION OF THE ROLE OF TEACHER AIDES WHO WORK WITH CHILDREN WITH TRAUMATIC BRAIN INJURY

Information Sheet

I am looking to recruit participants in a study I am conducting about the role of teacher aides who work with children with traumatic brain injury. In particular I am interested in comparing the perceptions of parents, teachers and teacher aides themselves on a number of different issues regarding the role of the teacher aide. My name is Michelle McIntosh and I am conducting this research as part of my postgraduate Masters degree at Massey University under the supervision of Professor Janet Leathem.

The study involves participants filling in a questionnaire and posting to the School of Psychology in a freepost envelope provided. I will give the questionnaires and information sheets to the principal to distribute to the parent/s, teacher/s, and teacher aide/s concerned. Participants do not have to give their name or the name of the child concerned and all of the information provided will remain strictly confidential, including the name of your school. The information will be stored in a locked cabinet in the School of Psychology and will be destroyed following completion of the study. The information provided will be used for the Master's thesis, however, if the results are published, no information that identifies any individual school or respondent will be published.

Filling in the questionnaire implies consent, however, recruiting participants in your school does not mean they are under any obligation to participate. Please note that this study is in no way an assessment or judgement of the individual performance of the teacher aide but rather an examination of group differences on a number of different issues regarding the role of the teacher aide. The overall objective of this study is to clarify any problems or concerns that have been identified on a personal level. If so the information will contribute to improve the effectiveness of teacher aides' contribution to the learning outcomes of a child with a brain injury. You can request a summary of results by filling in your details below. If you have any questions or concerns relating to this study you can contact either my supervisor or myself. You can contact me by phone: (06) 843-8900 or by email: michelle@mcintosh.gen.nz. Or you can contact my supervisor, Professor Janet Leathem, telephone (04) 801 2794 ext 6768. This project has been reviewed and approved by the Massey University Human Ethics Committee, WGTN Protocol 02/116. If you have any concerns about the conduct of this research, please contact Dr Pushpa Wood, Chair, Massey University Regional Ethics Committee, Wellington, telephone (04) 801 2794 ext 6723, email P.Wood@massey.ac.nz.

Thank you for considering allowing me to recruit participants in your school.

Michelle McIntosh

Researcher

Massey University

Wellington Campus
Private Box 756,
Wellington,
New Zealand
Telephone: 64 4 801 2794
Facsimile: 64 6 801 2692

AN EXAMINATION OF THE ROLE OF TEACHER AIDES WHO WORK WITH CHILDREN WITH TRAUMATIC BRAIN INJURY

Information Sheet

As a teacher aide of a child with traumatic brain injury, you are being asked to participate in a study about the role of teacher aides who work with children with a traumatic brain injury. In particular I am interested in comparing the perceptions of parents, teachers as well as teacher aides themselves on a number of different issues regarding the role of the teacher aide. My name is Michelle McIntosh and I am conducting this research as part of my postgraduate Masters degree at Massey University under the supervision of Professor Janet Leathem.

You are under no obligation to participate. If you are interested in participating, the study would involve filling out a questionnaire. Following completion of the questionnaire you simply need to place it in the freepost envelope provided and post to the School of Psychology. Please note that this study is in no way an assessment or judgement of your performance as a teacher aide but rather an examination of group differences on a number of different issues regarding the role of the teacher aide.

Filling in the questionnaire implies consent. You do not have to answer all of the questions and you do not need to give your name or any personal details. All of the information provided will remain strictly confidential. The overall objective of this study is to clarify any problems or concerns that have been identified on a personal level. If so the information will contribute to improve the effectiveness of teacher aides' contribution to the learning outcomes of a child with a brain injury. You can request a summary of results by filling in your details below. If you have any questions or concerns relating to this study you can contact either my supervisor or myself. You can contact me by phone: (06) 843-8900 or by email: michelle@mcintosh.gen.nz. Or you can contact my supervisor, Professor Janet Leathem, telephone (04) 801 2794 ext 6768. This project has been reviewed and approved by the Massey University Human Ethics Committee, WGTN Protocol 02/116. If you have any concerns about the conduct of this research, please contact Dr Pushpa Wood, Chair, Massey University Regional Ethics Committee, Wellington, telephone (04) 801 2794 ext 6723, email P.Wood@massey.ac.nz.

Thank you for considering participation in this study

Michelle McIntosh

Researcher

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AN EXAMINATION OF THE ROLE OF TEACHER AIDES WHO WORK WITH CHILDREN WITH TRAUMATIC BRAIN INJURY

Information Sheet

As a parent of a child with traumatic brain injury, you are being asked to participate in a study about the role of teacher aides who work with children with a traumatic brain injury. In particular I am interested in comparing the perceptions of parents, teachers as well as teacher aides themselves on a number of different issues regarding the role of the teacher aide. My name is Michelle McIntosh and I am conducting this research as part of my postgraduate Masters degree at Massey University under the supervision of Professor Janet Leathem.

You are under no obligation to participate. If you are interested in participating, the study would involve filling out a questionnaire. Following completion of the questionnaire you simply need to place it in the freepost envelope provided and post to the School of Psychology. Please note that this study is in no way an assessment or judgement of the individual performance of the teacher aide but rather an examination of group differences on a number of different issues regarding the role of the teacher aide.

Filling in the questionnaire implies consent. You do not have to answer all of the questions and you do not need to give your name or any personal details. All of the information provided will remain strictly confidential. The overall objective of this study is to clarify any problems or concerns that have been identified on a personal level. If so the information will contribute to improve the effectiveness of teacher aides' contribution to the learning outcomes of a child with a brain injury. You can request a summary of results by filling in your details below. If you have any questions or concerns relating to this study you can contact either my supervisor or myself. You can contact me by phone: (06) 843-8900 or by email: michelle@mcintosh.gen.nz. Or you can contact my supervisor, Professor Janet Leathem, telephone (04) 801 2794 ext 6768. This project has been reviewed and approved by the Massey University Human Ethics Committee, WGTN Protocol 02/116. If you have any concerns about the conduct of this research, please contact Dr Pushpa Wood, Chair, Massey University Regional Ethics Committee, Wellington, telephone (04) 801 2794 ext 6723, email P.Wood@massey.ac.nz.

Thank you for considering participation in this study

Michelle McIntosh

Researcher

Massey University

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AN EXAMINATION OF THE ROLE OF TEACHER AIDES WHO WORK WITH CHILDREN WITH TRAUMATIC BRAIN INJURY

Information Sheet

As a teacher of a child with traumatic brain injury, you are being asked to participate in a study about the role of teacher aides who work with children with a traumatic brain injury. In particular I am interested in comparing the perceptions of parents, teachers as well as teacher aides themselves on a number of different issues regarding the role of the teacher aide. My name is Michelle McIntosh and I am conducting this research as part of my postgraduate Masters degree at Massey University under the supervision of Professor Janet Leathem.

You are under no obligation to participate. If you are interested in participating, the study would involve filling out a questionnaire. Following completion of the questionnaire you simply need to place it in the freepost envelope provided and post to the School of Psychology. Please note that this study is in no way an assessment or judgement of the individual performance of the teacher aide but rather an examination of group differences on a number of different issues regarding the role of the teacher aide.

Filling in the questionnaire implies consent. You do not have to answer all of the questions and you do not need to give your name or any personal details. All of the information provided will remain strictly confidential. The overall objective of this study is to clarify any problems or concerns that have been identified on a personal level. If so the information will contribute to improve the effectiveness of teacher aides' contribution to the learning outcomes of a child with a brain injury. You can request a summary of results by filling in your details below. If you have any questions or concerns relating to this study you can contact either my supervisor or myself. You can contact me by phone: (06) 843-8900 or by email: michelle@mcintosh.gen.nz. Or you can contact my supervisor, Professor Janet Leathem, telephone (04) 801 2794 ext 6768. This project has been reviewed and approved by the Massey University Human Ethics Committee, WGTN Protocol 02/116. If you have any concerns about the conduct of this research, please contact Dr Pushpa Wood, Chair, Massey University Regional Ethics Committee, Wellington, telephone (04) 801 2794 ext 6723, email P.Wood@massey.ac.nz.

Thank you for considering participation in this study

Michelle McIntosh

Researcher

Appendix D
School Consent Form

AN EXAMINATION OF THE ROLE OF TEACHER AIDES WHO WORK WITH CHILDREN WITH TRAUMATIC BRAIN INJURY

School Consent Form

I have read the information sheet and have had the details of the study explained to me. I understand that I may ask further questions at any time.

I understand that participation in this study is entirely voluntary and participants do not have to answer all questions.

I understand that all information will remain confidential including the name of the school and the names of participants.

I allow the researcher to recruit participants.

Signed:.....

Name: .....

Date: .....

Appendix E
Cover Letter to Parents

School of Psychology
Massey University
Private Bag 756
Wellington

To Whom It May Concern

Please find enclosed an information sheet and questionnaire for you. I am also looking to recruit the teacher aide and teacher of your child and I am asking for your assistance in doing so. I have enclosed questionnaires for the teacher aide and teacher, which are placed in pre-stamped envelopes. Could you please pass these on to the teacher aide and teacher concerned. Recruiting participants in this way ensures the anonymity of all participants. Your assistance would be very much appreciated.

Yours sincerely

Michelle McIntosh