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“Look Mum, No Hands!”: The effects of increasing opportunities for choice-making and independence for children with disabilities when using a Riding for the Disabled programme.

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ABSTRACT

Many non-disabled people take for granted their ability to choose when they receive help from others. Those with disabilities are often denied this choice, having minimal control over their lives. Increasing literature and research advocate that children with disabilities should be allowed choice-opportunities, as this is an essential component of becoming self-determined. Increasing access to choice has many benefits, including increasing enjoyment, confidence, assertiveness, motivation, and performance. Furthermore, it has been shown to decrease challenging and undesirable behaviour. The current project investigated the effects of providing choice to children with disabilities while participating in riding sessions at the Riding for the Disabled. Furthermore, it investigated whether the children could become more independent when completing riding related tasks. The mastery of two routines (mounting and dismounting) was analysed. All participants improved in their mastery of routines, and thus their independence increased. The hypothesis that with the provision of choice and increase in independence, the children would express higher levels of enjoyment was supported. Those who see providing choice as a deleterious concept fear that children with disabilities will make poor decisions. The project investigated the effect of choice opportunities on the level of risk that the children engaged in when performing riding activities. It was found that the children did not expose themselves to any unnecessary risk despite the increase in control they experienced while riding. An alternating treatment design was used for eight single-case studies. Dependent variables measured were expressions of enjoyment, inattention, undesirable behaviour, level of risk, mastery of routines, number of prompts needed, and incidents of crying.

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**“There is something about the outside of a horse that is good for the
inside of a man”**

Winston Churchill

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CHAPTER 1. INTRODUCTION AND LITERATURE REVIEW

Personal Prologue

I have been fortunate enough to be involved with horses my whole life. This has given me the opportunity to meet people, go places, and learn lessons that I would not have been exposed to in other circumstances. When working with horses you learn to deal with happiness and disappointment, success and failure, dedication, goal setting, and obstacles that arise at the most inconvenient of times. On leaving high school I came to Massey University to pursue a career in psychology. As an undergraduate student I was required to study a community group for a project. The Riding for the Disabled (RDA) was an obvious choice as it combined my two primary interests in life: horses and psychology. From the outset I realised that the children involved derived a huge amount of pleasure from being around the horses, and that their time there produced many benefits, both physical and psychological. I enjoyed my time with the group so much I have spent the last three years as a volunteer there. During this time I started to look at the programme from a psychological point of view and how it could be used as a context to provide maximum enjoyment for the children, and at the same time teach them skills that will benefit them in other areas of life. My thesis project seemed a logical method of formally investigating this. After discussion with my supervisor, Ian Evans, we decided to focus on the concepts of choice, independence, and risk. Thus the RDA became a context for my project, rather than the variable under investigation. This project has not only taught me about higher academic research, but has opened my eyes to a possible career working with children with disabilities. The following study will contain narratives of my observations from the sessions at the RDA. I believe these are of value to the project and help clarify the outcomes and purpose of the project.

Working with Children with Disabilities

Those with disabilities are different structurally, physiologically, or psychologically from non-disabled persons due to an accident, disease, or developmental problems (Fine & Fine, 1996). Research has shown that children with disabilities are more likely to have a negative experience than their non-disabled counterparts. Youngsters with disabilities often have an external locus of control, low self-esteem, poor planning and goal setting skills, at school participate in less extra curricular activities, and have difficulty in gathering information for decision making (Field, Martin, Miller, Ward, & Wehmeyer, 1998). Children with disabilities are often quick to attribute failure to themselves, but are reluctant to take credit for success (Fine & Fine, 1996; Wiest, Wong, & Kreil, 1998).

Two main perspectives can be applied to people with disabilities (Sugerman, 2001). Firstly, the compensation approach views the person as having suffered a loss because of their disability, and that they are not complete or whole. Professionals are employed to compensate for this loss; technical and human aides are essential to daily functioning. In contrast, the transcendence approach sees each individual as a whole person, who has the ability to manage his or her own life. Human and technical aides are used as a means to gain independence, with the individual retaining control.

Many children with disabilities are subject to negative or critical judgment and discrimination from the wider community. Reactions to children with disabilities can range from pity, to avoidance of interaction. Many people consider children with disabilities as needing special protection. Some, who believe they are acting in the best interest of the child, take on the responsibility of making all the decisions in the child's life. It is commonly thought that if these children are allowed to make choices, the choices will be detrimental to their health or habilitative goals-those that teach skills necessary for independent living (Bannerman, Sheldon, Sherman, & Harchik, 1990). However, by taking away the opportunity to make choices, we are also taking away the right to seek what one desires (Hoffman & Field, 1995). Expressing preferences is one way that people develop and portray their unique identity.

Deinstitutionalisation and normalisation have called for the examination of how services are delivered to people with disabilities. Traditionally those with disabilities were taught compliance. Independence and self-reliance were considered negative characteristics (Shevin & Klein, 1984/2004). In more recent times programmes that are highly structured and controlling, and that do not foster client initiative, have been criticised. Instead, advocates now have an increased focus on active learner participation, which in turn increases the emphasis on the development of autonomy and independence. This shift in thinking aims to improve quality of life for people with disabilities. Improved quality of life is a goal all people strive towards, disabled or not. Some theorists propose that Quality of Life comprises of five domains: physical well-being, material well-being, social well-being, emotional well-being, and development and activity (Kearney & McKnight, 1997).

Deinstitutionalisation and normalisation have encouraged families to replace service providers as the primary caregivers for children with disabilities. This has presented new challenges for families, who are unfamiliar with the unique responsibilities and decisions that accompany caring for a child with disabilities. As any child grows and matures, parents often struggle to allow their offspring to become more independent (Evans, 1998). There is a fear for their physical and psychological safety. This is amplified in families where the child has a disability. "Over-protective" parents are one of the major barriers to children with disabilities becoming independent (Field, 1996). There is a fear that the child will not be able to deal with the risks involved in becoming responsible for his or her own life. Negotiation about who can make what decisions is often lengthy and with heated argument. Minimal conflict and problems arise if control is decreased gradually (Field, 1996). In an ideal situation, children with disabilities would be as responsible for themselves as a non-disabled child of the same age would be. This would mean any support would not be controlling, concern for safety would not restrict freedoms, consequences of decisions would be relevant, and the child would be allowed to experience the results of their decisions (Evans, 1998).

Unfortunately children with disabilities are prone to developing atypical patterns of attachment relationships as they are more dependent on their parents, who in turn are very protective of their child (Crittenden, 1990). Thus it is important that families

foster sound and balanced relationships. This will increase the chances of positive development in the child.

In addition to the family, specialists are employed to help care for the child and improve their quality of life. These may include doctors, physiotherapists, occupational therapists, psychologists, educational therapists, recreational therapists, and so on. Those working with children with disabilities need to define the term 'assistance' carefully. For children to maintain autonomy, assistance needs to be co-operative help, with the control of the situation remaining in the hands of the individual (Evans, 1998). Therefore the helper is an extension of the individual, rather than a separate entity with their own ideas about how the activity should be completed. For the ultimate benefit of the child, the multidisciplinary team needs to work together using the same methods and theory to reach a common goal.

Environments that are conducive to the development of autonomy and independence, and appropriate help from supportive others, can greatly reduce the impact of limitations imposed by disabilities. In an ideal world, a child with a disability can develop into an adult who can live a purposeful life, feeling minimally restricted by their disability.

Choice

Choice can be defined as the objective act of selecting a preferred alternative among several familiar options (Kearney & McKnight, 1997). Closed-ended questions are the most simplistic form of choice, and useful when choice-making skills are being taught or communication is difficult. Open-ended questions are more applicable to those experienced in the choice-making process (Kleinert & Kearns, 2001). Choice opportunities can be included in many dimensions. These include time, content, sequence, or item selection. If autonomy is to be maximised, choice opportunities should be combined across several dimensions.

Field (1996) states that making a choice involves eight steps:

- 1) Having an awareness of preferences.
- 2) Appreciating the opportunity to make a choice.
- 3) Recognising the choice-making opportunities.
- 4) Understanding the present choice or decision.
- 5) Setting personal outcome standards.
- 6) Generating the alternative choices.
- 7) Evaluating the alternative and its consequences.
- 8) Selecting the alternative that most closely meets the individual's goals.

Bambara (2004) goes beyond this definition by claiming that making a choice is more than selecting between alternatives, that the choice must be meaningful to have positive effects on development and affect. It can be assumed that the more important the activity is to the child, the more important it is for them to be able to make choices and retain control (Cardol, De Jong, & Ward, 2002). This importance will be amplified if the child cannot conduct the activity independently due to physical disability. In this instance, psychological control takes precedence.

The relevance of choices changes constantly, as the child matures the choices and their consequences must also advance. Choice can be developed by decreasing the graduations of discriminations within a domain from gross to fine, increasing the number of alternatives, or adding new domains in which choice can be made (Shevin & Klein, 1984/2004).

Choice-making is a skill that needs to be taught. This is especially important for children with severe disabilities as it cannot be assumed that they will naturally learn the skills necessary to make a decision unaided (Bambara, 2004). Many children with disabilities cannot cope with making conventional choices straight away, therefore special choice-making opportunities need to be developed for them. Development of choice-making skills should be started as early as possible. The process of teaching choice-making involves verbal instructions, praise, corrective feedback, and manual guidance (Kearney & McKnight, 1997). Often the process involves teaching children methods of communication other than biting, screaming, or other problem behaviours (Shevin & Klein, 1984/2004).

Wehmeyer (2002) outlines specific skills and goals to aspire to as the child progresses through the school years. During early elementary school choice-making opportunities should be provided, allowing the child to think out loud as they problem-solve. The teacher should then provide feedback to help link choices with consequences. Late elementary and middle school should teach the child to systematically analyse options in regards to their consequences. Goal setting should be introduced, as should the evaluation of performance and generation of ideas for improvement. High school students should be encouraged to make decisions that effect their day-to-day living. At this stage, the student should be taught how to break long-term goals into short-term objectives, linking these to decision-making. To fully ensure that choice-making skills are learnt, response prompt fading may be needed (Lancioni, O'Reilly, & Emerson, 1996). Research has indicated that once taught, choice-making skills can be generalised to environments other than the one in which they were taught (Kearney & McKnight, 1997; Carter, 2001). This indicates the importance of developing effective choice-making skills in educational settings, as they can then be transferred to the home and wider community.

The issue of choice is controversial, with arguments both for and against. Those against allowing children with disabilities to make decisions worry that the child will make poor or dangerous choices. There are also concerns that the child will choose options that allow them to remain dependent on others, or trivial activities that will hinder the development of habilitative skills. If the child chooses to remain in bed, or make decisions that impact negatively on their health, such as refuse medication, then choice is seen as a deleterious idea. Some care providers argue that the issue of choice has developed a conflict between agency policies and the individual's rights (Kearney & McKnight, 1997). Both groups often have differing ideas and goals, making compromise difficult. This is compounded when service providers have to meet specific criteria in order to attain government funding. Research has indicated there are some negative effects of allowing children with disabilities to make choices. These include increasing impulsivity, anxiety, avoidance, speech related problems, over-activity, and inappropriate social behaviours (Kearney & McKnight, 1997).

Advocates for allowing children with disabilities to make choices in their daily living and activities argue that current legislation mandates choice (Kearney & McKnight, 1997). Research has shown that when choice opportunities are available skills, performance, communication, empowerment and assertiveness improve (Kearney & McKnight, 1997). Further research has also indicated that when children with disabilities are allowed to make choices their sense of control and motivation increases, and conflict with external forms of power decreases (Lancioni et. al., 1996; Bannerman et. al., 1990; Dyer, Dulap, & Winterling, 1990). Furthermore, children who were exposed to choice conditions demonstrated increased participation and engagement in tasks, and decreased problem behaviours (Bambara, 2004). By allowing children with disabilities to make choices, their moral responsibility will develop in much the same way as their nondisabled counterparts. This is as they become accountable for their own behaviour, and aware that how they act influences the environment in which they live.

Cole and Levinson (2002) investigated the effect of verbal directives versus choice questions on challenging behaviour of children with developmental disorders. They found that challenging behaviour decreased in the choice condition. Also, if choice of task was offered, more steps were completed before the child engaged in challenging behaviour. In addition, the children completed more independent initiations, had increased task engagement, and increased spontaneous speech. Cole and Levinson (2002) claim that it was not the increased exposure to preferred tasks and stimulus that was beneficial, but the actual act of choosing. Carter (2001) supported this idea, maintaining it was the intrinsic reinforcement creating the positive effect. Both studies used yoked designs to control for the effect of preference. Cole and Levinson (2002) further suggest that choice opportunities should not be restricted to task and reward, but expanded to multiple opportunities within daily routines.

A differing account for the positive effects gained from offering choice to children with disabilities is that it increases access to preferred activities and items (Fisher, Thompson, Piazza, & Gotjen, 1997). This works on the assumption that they have likes and dislikes, and that the child can identify these and express them (Shevin & Klein, 1984/2004). Preference works on a five-factor continuum: Highly preferred,

preferred, neutral, dispreferred, and highly dispreferred (Kearney & McKnight, 1997). Preference could be due to the nature of the task, the relative ease or difficulty, or time needed to complete the task (Killu, Clare, & Im, 1999). Preference is a constantly changing construct, therefore continuing choice opportunities are important so the child can communicate any changes in preference. If those working with children with disabilities assume they know the child's preferences, and provide them without offering choice, they are impeding the child's autonomy. Allowing children with disabilities access to preferences has been shown to increase self-image, decrease problem behaviour, produce better academic performance, and increase periods of sustained leisure activity (Kearney & McKnight, 1997; Killu et. al., 1999). Killu and colleagues (1999) found that preference was a higher contributor to positive outcomes than the act of choice. Choice and no-choice groups displayed similar results as long as the children had access to the preferred activities. However, the authors did caution that these results were not replicated reliably across subjects, and hence should be used with discretion. Lancioni and colleague's (1996) review of literature on choice further supported this claim. When analysing current literature on the subject they found that high preference tasks assigned to the child, and when the child selected the same tasks themselves, both received on task behaviour scores of 90%. Low preference tasks assigned to the child acquired an on task score of 46%.

It can be difficult measuring the effects of choice opportunities for children with disabilities due to the challenge of operationally defining the dependent variables. Typically, constructs such as happiness, enjoyment, or sense of control are measured using self-report. Unfortunately this is often not appropriate when working with children with disabilities due to communication restrictions. Green and Reid (1996), claim that phenomena such as happiness are private events or hypothetical constructs. They defined happiness as any facial expression or vocalisation typically considered an indicator of happiness among people without disabilities, for example: smiling, laughing, and yelling while smiling. Happiness or enjoyment indices based on this definition are simple and applicable in a variety of situations. Green and Reid (1996) found such indices to have reasonably clear face validity. Though there is some concern that children may smile for social or operant reasons, this is a minimum concern in regards to children with disabilities as they have few other behaviours

under apparent social control (Green & Reid, 1996). There is always a risk of limited accuracy when another person subjectively rates another's private experiences. The clearer the operational definition, the more accurate the assessment is likely to be.

The battle of creating choice opportunities is made redundant if the choice alternatives and selections cannot be communicated effectively. Many children with disabilities do not communicate in a manner typical of mainstream communication patterns. Thus, unless the communication partner is familiar with the child's communication method, the child's wishes and message may be misinterpreted or missed altogether. There is a risk of mistaking lack of protest for informed consent, habitual behaviour for active choice, and resignation for contentment (Shevin & Klein, 1984/2004). If children with disabilities and those that work with them can develop an effective communication method, then the child no longer has to use non-compliance and low motivation as a means of showing they do not want to participate (Kearney & McKnight, 1997). Research suggests that educational personnel provide few opportunities for choice, and when they do, fail to respond appropriately (Sigafos & Dempsey, 1992).

If the child is non-verbal, they will employ other methods of communicating choice. Non-symbolic communication means are often unique to the individual. Common non-symbolic communication includes vocal sounds, physical gestures, or affective displays (Snell & Brown, 2000; Sigafos & Dempsey, 1992). Symbolic communication includes communication books or boards, sign languages, or computer assisted communication systems (Dennis, 2002). Pictorial presentations of choice are time and cost effective, flexible, have direct reference to preferences and provide utility for those with poor expressive language (Kearney & McKnight, 1997). However, they have poor predictive validity and are of no use to those with visual impairments. There is also speculation about their susceptibility to random guessing (Kearney & McKnight, 1997). Approach is another method children with disabilities use to communicate choice. In their research, Kearney and McKnight (1997) defined approach as making a voluntary body movement towards an item, maintaining eye-contact with an item for more than three seconds, or exhibiting a positive facial expression or a positive verbalisation within eight seconds of presentation of a

stimulus. For children with visual impairments, using actual objects that represent options is a good way of communicating choice (Kleinert & Kearns, 2001). The objects can be miniature representations, tangible symbols, or textured symbols.

Characteristics of the teller, listener and environment can all present obstacles to successful communication (Dennis, 2002). Learned helplessness, compliance issues, lack of familiarity, emotional issues, and physical traits may restrict children with disabilities from being able to communicate with those around them. The listener's demeanor, personal attributes, practices, and experience all impact upon how able they are to successfully understand communication attempts. Ideally, those on the receiving end of communication will have a belief that the communication is worthwhile, a commitment to making sure they understand it, and a genuine respect and value for the children they are working with (Dennis, 2002). The environment's physical environment and professional practices can dictate whether successful communication interactions will be achieved.

In summary, research in the area of choice and children with disabilities has advanced greatly in the last ten years (Bambara, 2004; Cannella, O'Reilly, & Lancioni, 2005). However, further investigation is still needed. Previously, choice was seen as a permissible activity rather than a desired habilitative outcome. Hence choice opportunities for children with disabilities were limited, if offered at all (Shevin & Klein, 1984/2004; Cannella et.al., 2005; Kleinert & Kearns, 2001). A detrimental cycle has developed due to children with disabilities being constantly denied choice opportunities. If a choice opportunity is offered when choice-making skills have not been learnt, it is unlikely the individual will be capable of making choice. This creates limited expectancies of children with disabilities in regards to independence, and choice is not offered again, and so the unproductive cycle continues. They can not, therefore, acquire control over their lives.

Choice may have been limited due to the fact that professionals have previously concentrated on setting habilitative goals and the best methods of reaching these goals (Lancioni et.al., 1996). Choice opportunities may also have been limited due to lack of effective communication skills between children with disabilities and those who work with them (Dibley & Lim, 1999).

The benefits of choice appear to outweigh the negative aspects. Choice, when implemented into programmes effectively, is a non-intrusive method of decreasing problem behaviour and increasing quality of life for children with disabilities.

Independence and Autonomy

Since the early 1990s the disability community has placed increasing importance on the issues of independence and autonomy (Field, 1996; Wehmeyer, 2002). People with disabilities, and those that work in the field, have questioned the lack of opportunity for independence and autonomy to develop.

The terms self-determination, independence and autonomy are often confused and used synonymously. However, they are essentially separate concepts, though interlinked. The many definitions of each construct appear to be based on the same common elements: freedom, choice, control, action, and outcomes (Field, 1996). For clarity's sake each concept will be defined, and the relationship to the other concepts will be explained.

Self-determination can be defined as making and enacting choices to control one's life to the maximum extent possible. This is based on knowing and valuing oneself, and is used in the pursuit of one's own needs, interests, and values (Field, 1996). Self-determination is influenced by internal factors of the individual (values, skills, and knowledge for example) and by environmental factors (for instance: opportunities for choice making, or attitudes of others) (Field, 1996). Self-determined individuals are those that are able to make choices, assert their presence, make their concerns known, evaluate their progress, and adjust their performance accordingly (Kleinert & Kearns, 2001). There are eleven skills critical to self-determination:

- 1) choice-making
- 2) decision-making
- 3) problem-solving
- 4) self advocacy
- 5) self-awareness
- 6) self-management

- 7) self-knowledge
- 8) leadership
- 9) goal-setting
- 10) self-efficacy
- 11) internal locus of control (Kleinert & Kearns, 2001).

Autonomy can be split into executional and decisional autonomy (Cardol et. al., 2002). Decisional autonomy is the ability to make decisions without external restraint of coercion. For example, deciding when to get dressed. Executional autonomy is the ability and freedom to act on the basis of decisional autonomy. For example, dressing as oneself wishes. Physical disabilities may decrease executional autonomy, but ideally should not impact upon decisional autonomy. If decisional autonomy is fully realised then the individual can build a meaningful life expressing their individuality (Cardol et. al., 2002). This concept of autonomy stresses that it is the psychological capacity, rather than the physical, that is important when striving for autonomy. Having an internal locus of control, effective coping strategies, a good support network, and positive reciprocal relationships are all conducive to the successful development of autonomy (Crittenden, 1990). Independence is an essential component of autonomy. It is the capacity to make choices, using help from others if necessary. Barriers to independence include a lack of self-awareness and self-esteem, learned helplessness, and self depreciating attributes (Field, 1996). Autonomy and self-determination are closely related, and neither are possible unless the individual has the right and ability to make choices.

Research has demonstrated the positive effects gained from increasing self-determination and autonomy in children with disabilities. Educational research has indicated that by involving the students in the planning and implementation of their educational programme, the students performed better (Field, 1996). An American programme, Project PARTnership, promoted self-determination in children with disabilities via access to the arts (Field, 1996). This allowed the children to establish and work towards goals, make choices, work independently, initiate plans, and self evaluate. The programme structure was conducive to maximum self-determination development. Instructors utilised modeling, provided opportunities for choice making,

provided retraining of detrimental attributions, and used appropriate behavioural strategies.

Passivity and disruptive behaviours are common in children with disabilities. Perceived control may influence these undesirable characteristics. It can be assumed that children with disabilities perceive significant adults as being powerful and authoritative, therefore it is unlikely that they would question their right to have some control over their lives (Melton & Stanley, 1996). If the child does not feel a balance in control then they may become passive or engage in disruptive behaviour in an attempt to reclaim power (Carter, 2001). Research supports this showing an increased rate of problem behaviour or passivity when children are in no-choice conditions in comparison to conditions that offer choice (Carter, 2001). Self determination is also positively correlated with self-esteem and feelings of self-worth (Wehmeyer, 2002).

Through effective development of independence and autonomy in children with disabilities, adulthood becomes a less daunting prospect. Research has shown that students with disabilities who left school with high levels of self-determination were more than twice as likely than those not self-determined to be employed one year after graduation, as well as hold better jobs (Wehmeyer, 2002). They were also more likely to live somewhere other than the family home (Wehmeyer, 2002). By possessing the ability to assess alternatives and make positive choices, children with disabilities will develop into senior members of the community, less reliant on help than their dependent counterparts.

Risk

Risk is an important concept that can be linked to the development of autonomy and independence. Those without disabilities are subject to risk when partaking in decision-making. It is a normal part of the process when progressing through the early stages of decision-making and dealing with unknown or poorly assessed consequences. Therefore, normalisation requires people with disabilities to be allowed the dignity of risk. When developing independence, children with disabilities become aware of what they can and cannot do (Field, 1996). This will only occur if when decisions are made, one consequence is failure. Through failure limitations are

learnt. If the child can accurately assess consequences in respect to limitations, they can then learn to protect themselves, or choose the more suitable option. Risk does not always have to be dangerous. Settings for developing choice-making skills should provide a context for safe mistake-making. Therefore, the child can make decisions with support available if the option taken yields consequences that are less than desirable. Safe mistake making is an essential part of helping children with disabilities experience a normal development of independence.

Routines

A routine is a sequence of skills required to achieve a critical effect. The sequence has a distinct start and finish (Evans, Brown, Weed, Spry, & Owen, 1987). If the routine is to be meaningful, skills learnt should be maintained over time, and be generalised to new situations. It is also advantageous if the routine is judged valuable by the wider social community. This will give relevance to the child's tuition, and assist meeting habilitative goals. Routines can be applied to the domains of leisure, self-management, school, and mobility. When broken down into specific components, routines comprise of content (core, prepare, terminate), extension (initiate, monitor quality, monitor tempo, problem solve), and enrichment (communication, choice, social behaviours) (Evans et. al., 1987). Content components generally require physical activity. The routine is considered independently mastered if the extension components are achieved. These are the components that make the performance of the routine similar to how a non-disabled person would complete the task. Enrichment components, though not technically required, work further to create an experience similar to that of a non-disabled person (Evans, et. al., 1987).

When developing routines it is important to be realistic of the child's capabilities. It is unrealistic to expect severely disabled children to learn initiation of routines to natural cues (Wuerch & Voeltz, 1982; Evans, 1999). Obvious, generalised cues will increase success rates of initiation. Cues may come in the form of gestures, physical assistance, verbal instructions, demonstrations, pictorial representations, or symbolic props (Wuerch & Voeltz, 1982). If cues appear to be ineffective, professionals can modify the size of the step on the routine. The professional should also assess

whether the child's disability precludes performance, and whether partial participation is an appropriate objective (Wuerch & Voeltz, 1982).

Analysis of routine mastery is relatively simple. Each component is scored with a yes or no depending on whether the skill is completed independently or not. The dichotomous responses are then summarised and presented as a percentage representing the level of mastery of the routine. A routine is considered completely mastered if the subject can complete all ten components from core to social behaviour independently (Evans et. al., 1987).

Routines, when combined with other concepts related to improving appropriate behaviour and independence in children with disabilities, can produce further positive effects. Dibley and Lim (1999) found that introducing choice into routines increased task initiations and decreased protests.

The Riding for the Disabled

Horses have long been used to help improve the health and well-being of humans (NZRDA, 2000). As early as 2000BC Greeks and Romans used riding to maintain good health, during WWI horses were used in orthopaedic hospital programmes, and the mid 1900s horses were used to aid the rehabilitation of those with polio (NZRDA, 2000). In 1952 Liz Hartel, who was in a wheelchair due to polio, won a silver medal at the Helsinki Olympics in dressage. This brought public recognition to the benefits of equine involvement for those with disabilities, and thus led to the establishment of the Riding for the Disabled (RDA).

Over twenty five countries are members of the Federation of the Riding for the Disabled International. The RDA was first introduced into New Zealand in 1962. The NZRDA currently has over fifty groups operating, catering for more than 2500 riders with different disabilities (NZRDA, 2000). They work towards creating "confidence, independence and well-being for people with disabilities through therapeutic horse riding and horse care" (NZRDA, 2000). The RDA caters for individual therapy goals. These fall into the areas of therapy and rehabilitation, education, behaviour modification and social contact, and riding for sport and

recreation. Individual therapy goals are created in collaboration with various professionals familiar with the child, such as physiotherapists, psychologists, occupational therapists, riding therapists, and educational professionals.

Research has indicated that riding can be hugely beneficial for people with disabilities (Lehrman & Ross, 2001; MacKinnon, Noh, Laliberte, Lariviere, & Allan, 1995; Wollrab, 1998; Cawley, Cawley, & Retter, 1994; Bizub, Joy, & Davidson, 2003). Psychological benefits of leisure activities, such as riding, include intellectual stimulation, catharsis, hedonistic companionship, feelings of security, and expressive aestheticism (Fine & Fine, 1996). These benefits are directly influenced by the perceived sense of freedom experienced by the child (Fine & Fine, 1996).

Riding is a normalising experience for those with disabilities. For a brief period of time they are equal with nondisabled people. The RDA can be used to promote communication skills in children with disabilities. The riders have to communicate to the horse, helpers, and instructor. When riders begin their sessions at the RDA they are taught the simple commands of “walk on” and “whoa”. For nonverbal riders this command can be symbolic, signed for example.

Many attribute benefits of riding programmes for children with disabilities to the unique nature of the human-horse relationship (Wilson & Turner, 1998; Fine, 2000). Horses, like other animals, offer unconditional affection, and opportunities for the child to reciprocate feelings of love and affection. This is especially important if the child comes from a home environment where positive emotions are rare. Secondly, horses can act as a friend, confidant, playmate, and companion. The non-judgmental nature of the relationship is significant for children with disabilities as they are often subject to discrimination. The child’s interaction with horses helps develop trust, autonomy, responsibility, competence, and empathy (Wilson & Turner, 1998; Katcher & Wilkins, 1998).

Working with horses can help decrease learned helplessness, a common characteristic of children with disabilities. The child must engage in problem-solving when things do not go as planned, or if the horse does not respond to their commands (Kogan, Granger, Fitchett, Helmer, & Young, 1999). Dealing with frustrating circumstances

in a manner that is age appropriate and acceptable in mainstream environments is encouraged (Kogan et. al., 1999). The RDA provides a safe, supportive environment for choice-making to be learnt.

Benefits are often dependent of the disability of the rider, its severity, and the form of therapy offered (All, Loving, & Crane, 1999). The experience provided by the RDA is multi-sensory; it stimulates tactile, auditory, olfactory, and visual senses. The benefits are both physical and psychological. Research has indicated that this unique setting is beneficial to those who may not respond to typical therapy programmes (Wollrab, 1998). Mainstream education goals can also be incorporated into the RDA programme. Riders can have letters, numbers, or shapes used as part of a game or activity. Back at school, the riding session can be used as a tuition subject, and also gives the child something to talk to others about, thus increasing social interaction. Benefits gained from the RDA can be transferred to other environments (Wollrab, 1998).

Physical benefits gained from riding are due to the unique movement of the horse: up and down, side to side, forward and back. This is the closest movement available to replicate the human gait (MacKinnon et. al., 1995). This vestibular input stimulates the riders balancing mechanism, engaging muscles and equilibrium reactions (MacKinnon et. al., 1995) Physical benefits can be reinforced with the use of specific games that encourage the rider to reach and turn in different directions while on the horse (Lehrman & Ross, 2001).

When outdoor recreation, such as RDA programmes, were first identified as a viable therapeutic activity for children with disabilities coercion and pressure was used. Now it is recognised that this can cause emotional harm, and has implications for legal liability. Now those in charge of recreational programmes use a challenge-by-choice philosophy (Carlson & Evans, 2001). This allows the participant to set their own goals, choose how much of an activity they will complete, and utilises the idea of making informed choices.

The Present Study

The present study was conducted at the Manawatu Branch of the NZRDA. This is run completely by volunteers. The group operates within the school terms on Wednesdays, Thursdays, and Fridays. Riding sessions are decreased over the colder months. Most rides cater for around six children, though some are individual sessions. Riders come as part of a school group, or as an individual with either a support person or parent.

The Manawatu RDA raised enough money and sponsorship to enclose their woodchip arena with a roof and two walls in 2003. This has enabled riding to continue longer during the winter due to the increased shelter from the weather. The arena is surrounded by a fence to ensure safety. The property also contains a tack shed and amenities. The Manawatu RDA caters for approximately thirty riders, eight of these were used in the current project. Each rider participated in up to eight sessions that contributed to data for the study.

Riding sessions last for approximately thirty minutes. This depends on the rider's capabilities, attention span, and fitness level. The pony, leader, and side walkers are kept constant where ever possible to provide stability and familiarity for the riders and helpers.

The original programme was similar for each rider. Riders arrived at the RDA and a helmet was put on them before they were taken to their pony. They then rode around the arena for five minutes as a warm-up before being taken through the activities for the session. Riders were then dismounted and taken back to return their helmet. Some riders were encouraged to run-up their stirrups. Riders were not given any choice as to which activity they were to participate in or what order they were completed in.

The programme introduced for the purposes of the current study is a slight modification of the original programme. Riders were given choice opportunities between and within activities. All activities used were approved by the RDA. The present study is intended to examine the effects of increasing choice when working

with children with disabilities. It also looks at increasing the independence of these riders whilst they are involved in the RDA programme by teaching them how to perform riding related tasks without being reliant on the help from others. It was hypothesised that by increasing choice opportunities in the riding sessions, the riders would experience increased levels of enjoyment. It was also hypothesised that the children would be able learn and carry out the routines to mounting and dismounting, thus becoming less reliant on outside help, and enjoying their riding more. The concept of risk was also addressed, with the intention of investigating any relation it had to choice or independence. Increasing independence and choice would theoretically increase the child's feeling of control and confidence, and therefore increase risk taking. Safe risk taking is an important process when children are becoming autonomous, thus the RDA becomes a viable context for this phenomenon to occur.

The present study is essentially eight single case designs, with the data compared across each participant. This is as each child presented with unique abilities and limitations, dictating what activities they could participate in, and how independent they could realistically become when completing the routines.

CHAPTER 2. METHOD

Design

The current project was essentially eight single-case studies using an alternating treatment design. Each rider's treatment session contained both the choice and no-choice treatment conditions. This was favored over the reversal-replication design due to time constraints. The data has been compared across the participants to obtain an indication of generalisability of results. Originally a simple experimental design was going to be used with a control group and pre- and post-test measures. However, this was not possible due to the limited number of participants.

Baseline data was collected for Trevor, Helen, and Lisa. The other participants had limited number of sessions, thus the collection of baseline data would have minimised the time spent using the project programme. The alternating treatment design acts as its own control, as each session contained both the choice and no-choice condition.

Recruitment and Selection of Participants

The current project was discussed with the Manawatu RDA from the beginning. This was to ensure everything operated within their therapy and safety guidelines. Once the project details were finalised, a written account of the project was given to the Manawatu RDA, and a consent form was signed (see Appendix A).

Letters explaining the project and asking for permission to participate were sent to the riders currently enrolled in the RDA programme and their parents (Appendix B and C). The children received a simplified version of the letter sent to their parents. The parents were asked to explain the project to their child as best as possible, and gain their consent. If consent was not possible, the parents were required to give assent. Of the thirty-one letters sent out, ten were returned. Eight of these granted permission for the rider to participate in the project. Four participants were male and four female, giving a 50% split. The age range was 6- 16 years. The median age was 9 years, and the mean age was 10.125 years. More detailed data on each participant will be given

in a later section. Even though follow-up contact was made with parents, the level of returned letters was disappointing.

Five schools bring riders to the RDA as part of their weekly programme. Each school was contacted and asked for their permission for their students to be part of the project (Appendix D). Four of the schools gave consent for their students to participate. Only riders that provided parental and school consent participated in the project.

The RDA operates within the school terms. The project took place in the first school term of 2005 (February 23- April 13). Due to the time of return of permission slip, personal reasons, or school schedule, riders participated in a differing number of sessions. The number of sessions participated in ranged from 3-8.

The project was also discussed with existing volunteers. Each volunteer was given an information letter and a consent form (See Appendix E).

Participant Characteristics

The following section gives demographic information on each participant, and therapy goals that the RDA work towards as recorded on the rider referral forms. The dependent variables for each child are also noted.

Trevor

Trevor was a five-year-old boy with an autistic spectrum disorder. He had attended the RDA for one term previous to the implementation of the project. Therapy aims were to increase balance, posture, and confidence. Trevor was involved in eight riding sessions for the project. On initiation of the project Trevor maintained minimal eye-contact and rarely initiated conversation. When excited or bored Trevor tended to engage in repetitive hand movements, typical of autistic disorders. The dependent variables for Trevor were expression of enjoyment, frequency of inattention, level of risk, and mastery of routines.

Helen

Helen was thirteen-year-old girl with left cerebral hypogenesis and epilepsy. She had been coming to the RDA for three terms prior to the project. Therapy aims were to increase stimulation, mobility, co-ordination, and socialising. Helen was involved in eight riding sessions for the project. When Helen first began at the RDA it was reported that she looked down most of the time, would not participate in activities, and did not engage verbally with anyone else at the RDA. On initiation of the project Helen looked up and around her most of the time, and participated in activities with prompting. However, she still did not respond verbally to anyone but her caregiver who brought her to the RDA. Helen completed minimal steps contributing to the routines when the project was first initiated. Helen's dependent variables were expression of enjoyment, frequency of inattention, level, mastery of routines, and the number of prompts needed.

Sally

Sally was a fifteen-year-old girl with epilepsy and severe head injury. She had been attending the RDA for six terms before the project. Her current aims were to concentrate on holding the reins, increase balance, and increase awareness. Sally was in six sessions relating to the project. Sally had good verbal skills and was able to interact well with other riders and helpers. When the project began she did not steer the pony or complete many of the steps related to the routines without prompting. Sally's dependent variables were expression of enjoyment, level of risk, and mastery of routines.

Jane

Jane was a sixteen-year-old girl with a visual impairment. She had been attending the RDA for six years before the initiation of the project. There were no therapy aims noted on her RDA file. Jane was in four sessions for the project. Jane had good verbal and social skills; interacting well with riders and helpers at the RDA. When the project began she was already reasonably independent when mounting and dismounting, thus completing many of the steps relevant to the routines being studied.

Her dependent variables were expression of enjoyment, level of risk, and mastery of routines.

David

David was a seven-year-old boy with Autistic Disorder. He had attended five terms of riding before the project began. No aims were noted on his RDA file. David was involved in three sessions for the project. When the project began he had a very low attention span, and had difficulty sitting still when riding. The dependent variables for David were expression of enjoyment, frequency of inattention, level of risk, and mastery of routines.

Harry

Harry was a eight-year-old boy with Fragile X syndrome and Autistic Disorder. His vision was less clear when in close range with objects. He had participated in two terms at the RDA before the initiation of the project. Aims as noted on the RDA file were to learn to be gentle, become aware of the dangers when around horses, and to improve behaviour and sensory problems. Harry was in three sessions relating to the project. On initiation of the project he engaged in a large amount of problem behaviour, and was often removed from the pony before the session was over due to behavioural issues. Attention to task was also at a minimum. Harry's dependent variables were expression of enjoyment, frequency of undesirable behaviour, level of risk, and mastery of routines.

Daniel

Daniel was a ten-year-old boy with Down Syndrome. He had been riding for two terms previous to the project. His aims when attending the RDA were to be introduced to new situations and behave appropriately, and to learn care with animals. Daniel was in four sessions for the project. He was a very expressive child, interacting with other riders and helpers constantly, sometimes to the detriment of his riding. He participated freely in all tasks, though sometimes lost concentration. His

dependent variables were expression of enjoyment, frequency of inattention, level of risk, and mastery of routines.

Lisa

Lisa was a five-year-old girl with chromosomal abnormalities, anxiety problems and sensory process problems. She had participated in three terms of riding before the project. Aims as noted in her file were to increase balance, and improve coping with new sensory experiences. Lisa rode in six sessions for the project. When the project began Lisa was reluctant to look at the props used for activities and cried often. Crying was often started when given a fright; if the pony snorted for example. She clapped for herself when she completed an activity successfully, and appeared to enjoy it if those around her clapped too. Lisa did not make any verbalisations at the beginning of the project. Her dependent variables were expression of enjoyment, level of risk, mastery of routines, number of prompts needed, and frequency of incidents of crying.

Measures

Each participant had slightly different dependent variables under investigation. Dependent variables were determined by their presenting problems, and therapy aims as noted in their RDA file.

It was hypothesised that enjoyment levels would increase with the implementation of the project programme. The measure of enjoyment was based on Green and Reid's (1996) definition of happiness: Any facial expression or vocalisation typically considered an indicator of happiness among people without disabilities. This includes smiling, laughing, and yelling while smiling. This has been shown to have clear face validity in a variety of settings. A smile was defined as: a facial gesture resembling an expression of pleasure when lips are upturned. A smile could last for up to 10 seconds, after which it was counted as a new instance of smiling. Positive verbalisations were defined as: instances when the participant said they were enjoying something, for example "I liked that" or "that was fun", or non-lingual expressions such as screams or other sounds that were accompanied by a smile. Smiles and

positive verbalisations were recorded as data if they occurred in relation to the current riding activity. If the rider smiled while engaging in inappropriate behaviour it was not recorded. Smiles and positive verbalisations combined to create the measure of expressions of enjoyment. All participants were assessed on the basis of this observational variable. All data were gathered in either the choice or no-choice condition, allowing a comparison between the two conditions.

Several participants had low attention levels when riding. Inattention was defined as: looking or turning around when being spoken to or when they were meant to be looking at props for an activity, speaking to others when supposed to be performing an activity or listening to instructions, reaching out to touch things when not required by the activity, (in the case of Trevor and David) engaging in repetitive hand movements, and (in the case of participant Helen and Daniel) laying their face on the pony when supposed to be performing another activity. If inattention lasted for longer than 15 seconds it was classed as a separate incident of inattention. Inattention was a dependent variable for Trevor, Helen, David, Harry, and Daniel. Inattention was calculated as the number of incidents of inattention per session.

Undesirable behaviour was justified as a dependent variable for Harry as he had previously had his riding sessions cut short due to behavioural issues. Problem behaviour included making loud noises that could scare the horses, not sitting still, lifting his shirt up, or hitting the pony. The data was represented as the number of incidents of inappropriate behaviour per session.

Compared to other participants, Helen and Lisa appeared to need more prompting when initiating or completing an activity. Therefore, number of prompts needed was measured as a dependent variable. A prompt was defined as a verbal or physical instruction from the riding instructor to the rider. The mean number of prompts needed per session was calculated.

Lisa was very anxious in the beginning of the project and would often cry when scared. Crying was measured as an additional dependent variable for Lisa. Crying was defined as: making a sound that expressed fear or unhappiness accompanied by

tears. If the crying lasted for more than one minute, a new instance of crying was recorded. The data were represented as the number of incidents of crying per session.

The two routines assessed were mounting and dismounting. Each routine was broken down into the component steps that complete the routine (see Appendix E). Each session was dated, and data collected as to whether the rider completed the step with assistance or independently. The number of steps for each routine differed for some riders. For example, some riders did not use stirrups, thus the letting down and running up of stirrups was made redundant. Helen had the additional steps of taking her pony's gear off. All steps on the routines were actions already being performed, though usually with the help of another person. The aim was to enable the participants to complete the steps independently when realistically possible. If the rider initiated the step but could not physically complete it and asked for help, it was scored as being completed independently. This was similar to the method used by Evans and colleagues (1987) in their research on functional competencies. For example, Helen knew to undo the girth, but did not have the strength to lift the straps high enough, so asked for help. Initiation was the key to mastery. Mastery of each routine was calculated for each participant. This was done by dividing the number of steps completed by the number of steps in the routine, and then multiplying by 100 to obtain a percentage. The data were presented as the percentage of each separate routine mastered for each session.

The level of risk each rider engaged in when performing an activity was assessed. The Bean-bag, Cone, Ring and Letterbox games were rated on a scale of the most risky way of completing the activity, to the least risky way of completing the activity. The rating system was as follows: 0= did not perform the activity, 1= one hand was taken off the saddle but the rider did not lean, 2 = one hand was taken off the saddle and the rider leaned, 3 = both hands were taken off the saddle and the rider did not lean, and 4 = both hands were taken off the saddle and the rider leaned. Follow-the-leader was also assessed: 0= did not perform activity, 1=one hand off the saddle and no movement, 2= one hand off the saddle and movement, 3= two hands off the saddle and no movement, and 4= both hands off the saddle and movement. This was only assessed if the rider was the leader as they chose the action to be performed. The mean risk score was calculated for each session.

Procedure and Design

Participants for the project were existing riders of the Manawatu RDA programme. Initial contact with participants, parents, schools, and volunteers was made via the RDA to protect confidentiality. Letters were followed up with phone calls. Meetings were arranged to further discuss the project if requested. Each letter contained a permission slip that had to be signed and returned before permission was considered granted.

The RDA operates on Wednesday, Thursday, and Friday. The project operated within the existing timetable to minimise disruption to schedules. Only riders on Wednesday and Friday participated in the project. Wednesday had two riding sessions. Trevor was in the first session, he rode with five other riders. This session was taken by the existing riding instructor. Helen rode in the second session, this was one-on-one with myself as the instructor. Friday had three sessions. The first session had three riders, with Sally and Jane participating in the project. I acted as the instructor for this group. The second session had a total of 12 riders, each coming on alternate weeks. David, Harry, and Daniel rode in this session. The existing riding instructor took this group. The final session on Friday was a one-on-one session where I worked with Lisa. If I was not acting as the riding instructor I led the pony of the participant involved in the project. This allowed me to be in close contact with the participant and make accurate observations.

Groups continued to ride as usual even if only one or two riders were involved in the project. Those not involved in the project were not observed in any way relating to the project, but were still offered choice so it did not appear as if any favoritism was given to riders participating in the project. Volunteers that did not want to be part of the project helped with those children not involved in the project, thus continuing with their normal duties.

Research assistants were recruited to assist with gathering data. Two assistants, who were briefed in regards to confidentiality and signed a contract (see Appendix G),

videoed riding sessions. They were instructed to only video the child participating in the project. The research assistant provided a commentary on the video as to the activity name, and whether it was in the choice or no-choice condition.

Each riding session lasted for 30 minutes. Observation began when the riders entered the RDA property. This was when the first step of the mounting routine was meant to be initiated. This was to walk to the table and select a helmet. The research assistant recorded data on the mounting routine till the last step which was check body position in the saddle. The riders then rode around the arena for five minutes while the other riders were being mounted. After this five minute warm-up period videoing began. A range of ten games were available to the riders. These are as follows:

- 1) Bean-bag game: The rider is given a bean-bag, they ride up to a bucket and drop the bean-bag in. Works on aim, and balance.
- 2) Ring game: The rider rides up to a pole and either takes a ring off or places a ring on the pole. Works on eye-hand coordination and balance.
- 3) Cone game: The rider rides up to a pole and either places or takes a cone off the pole. Works on eye-hand coordination and balance.
- 4) Grandma's footsteps: The riding instructor walks ahead of the riders and turns around to face them as they appear to yawn and 'wake up'. When the riders see this they must halt and wait till the riding instructor turns around again. Works on verbal commands of 'walk on' and 'whoa', and physical aides such as tapping with legs and pulling on reins. Also encourages the riders to watch and concentrate on the cues given by the riding instructor.
- 5) Letterbox game: The rider is given a cardboard letter with an address on it. The rider is encouraged to read it when possible, or it is read to them. The rider must then carry the letter and ride up to a wooden letterbox where they must post it through the hole. Works on balance and problem solving, as the letter does not go through the hole unless put the right way.
- 6) Walking race: All riders line up and then on the riding instructor's command, walk to a predetermined finish line. This gives the riders an opportunity for competition. The ponies walk faster increasing the tempo of movement for the riders, who have to work on their balance to remain comfortable.

- 7) Old McDonald: Riders walk in a circle, each rider has a turn choosing an animal and the 'Old McDonald' song is sang by the riding instructor. When the riding instructor stops singing all riders must halt creating a 'musical statues' type game. Works on concentrating on audio cues and stopping and starting the pony.
- 8) Follow-the-Leader: One rider is chosen as the leader, they ride where they choose and perform actions of their choice. The other riders follow and copy the actions. The leader is encouraged to think of actions themselves, and the activity helps those who are following to work on concentration and mimicking skills.
- 9) Poles: Poles are set out around the arena, often in sets of three or four. When the riders go over the poles they are encouraged to count the poles, count how many times the pony hits them with their hooves, or ride to a specific part of the pole.
- 10) Bending: Cones are set out around the arena in a line, often in a set of six. The riders weave in and out them, sometimes counting them as they go past. This helps the riders improve their skill at using the reins to turn the pony.

At the conclusion of the riding session all riders line up at the end of the arena. The routine for dismounting begins, and is completed once the rider has returned their helmet to the table.

Each ride contained both the choice and no-choice conditions. The rider was given three activities to do, then offered three choice opportunities. This pattern continued till the session was over. In the groups where there was more than one rider, the no-choice condition for the rider under observation was when another rider chose an activity. When the project first began, the riders where given a choice between two activities. This progressed to a choice between five options. Some riders required the riding instructor to offer the relevant props when giving choice opportunities. Others could make a choice when offered options verbally. Riders were also offered choice within an activity, for example, what bean-bag they used, or what color cone or ring was used. All attempts were made to divide the time equally between the choice and no-choice condition.

Riders were given one-on-one help when learning and completing routines. The rider was given the opportunity to complete the routine, if the relevant step was not initiated after 30 seconds, the participant was given a prompt, this was verbal or physical depending on the rider. If, after three prompts, the participant had still not completed the step, it was done for them. The same procedure was used for each step.

Videoring lasted for 20 minutes each session. It began when the first activity started, and ended when the riders lined up at the end of the arena to dismount. Coding of the videos was completed once all the raw data was collected. Quantitative data were collected off the videos and from the scoring of routines. Qualitative data were recorded by myself at the completion of each riding session. At the completion of the study the videos of the riding sessions were given back to the parents to be used or disposed of at their discretion.

Interobserver Agreement

To ensure reliability, interobserver agreement was calculated for each of the dependent variables during the riding sessions or from the videotapes. I acted as one observer, while one of the research assistants acted as the second observer. Coding was done independently. Interobserver agreement was assessed for 38% of the sessions: two randomly selected sessions for each rider. The agreement percentage was calculated by dividing the number of agreements by the number of agreements plus disagreements, and multiplying the quotient by 100%. An agreement was defined as an instance in which both observers recorded the same behaviour. A disagreement was defined as when an observer recorded a behaviour as occurring, and the other did not (Dibley & Lim, 1999). The overall percentage of agreement for all dependent variables was 91.5% (range, 83% to 100%).

Ethical Considerations

The ethical considerations for this project were standard to all research. The research project was screened and approved by the Massey University Human Ethics Committee. The major ethical dilemma anticipated was the safety of the riders. It

was assured that no activities would differ from what the riders usually participated in, and that the only difference was that the riders would be allowed to choose what activity they performed. Thus the risk of riders being hurt was no more than would usually occur in an RDA riding session. When riders first join the RDA they sign a form in regards to liability of safety, therefore this was not part of the current project's consent form. Informed consent was gained from all involved: the Manawatu RDA, parents, riders (where possible), schools, and volunteers. Those wanting additional information were met with and the project discussed further.

The Manawatu RDA, all participants and their parents, were apprised of their rights to withdraw from the study at any point without consequence. Confidentiality was maintained as assured in information letters, no child, school or volunteer has been named in the publication of the project. Copies of the project will be made available to the RDA, parents, and schools.

CHAPTER 3. RESULTS

The following section presents the results for each participant separately, and then compares data across the participants to obtain an indication of generalisability of results. A written account is given first, followed by graphed presentations of the data. Data will be presented in the following order: (a) expression of enjoyment, (b) level of inattention or undesirable behaviour (if applicable), (c) level of risk engaged in while completing activities, and (d) mastery of routines. This will then be followed by any other dependent variables specific to that participant. Each participant is given a subjective rating out of 5 as to how much they benefited from the introduction of the project programme. The rating system is as follows: 1= did not benefit at all, 2= benefited slightly, 3= benefited moderately, 4= benefited at an above average level, and 5= benefited greatly. Some participants do not have baseline data as they either started late or attended the RDA on alternate weeks, therefore they did not participate in enough sessions.

Trevor

Trevor's level of enjoyment increased during the baseline condition. This indicates that Trevor was enjoying his time at the RDA before the programme was initiated. Figure 1 shows the increase in enjoyment continued after the programme was begun, demonstrating that the introduction of choice increased Trevor's enjoyment of his riding sessions even further. Trevor was able to make choice when presented with props and with the question "what game would you like to play now?" The steady increase of enjoyment in later sessions coincides with Trevor's increase of independence when riding (see Figure 4). Sessions 4 and 5 show a decrease in enjoyment from the general trend. If Session 5 is focused on, we can see a high level of inattention (see Figure 2), and lower level of risk taken than in other sessions (see Figure 3). There is no apparent explanation for this drop in enjoyment level, as other project variables were held constant. Confounding variables, such as lack of sleep, or distraction by other riders may have affected Trevor's performance in Session 5.

During my observations of Trevor I noted that he appeared to enjoy some activities more than others. When Trevor was the leader in the Follow-the-Leader game he smiled a great deal and was constantly turning around to check that the other riders were following his actions. Trevor also enjoyed the physical exercises, even when they occurred in the no-choice condition. In Sessions 1 and 3 over half of his total frequency of expressions of enjoyment occurred when participating in physical exercises.

Figure 2 shows Trevor's frequency of inattention. The data shows a general decrease in frequency. Though it does not reach a constant rate, further sessions may have demonstrated a levelling out in frequency. Session 5 has a high level of inattention, though it does not appear to be linked to the increase in independence and enjoyment, as later sessions show a decrease in frequency of inattention. Other variables may have impacted upon Trevor's level of inattention.

Figure 3 shows the mean level of risk that Trevor engaged in when performing tasks. This stayed at a reasonably constant level throughout the project. This indicates that despite an increase in independence and enjoyment, Trevor did not put himself in any unnecessary danger. Interestingly, when Trevor was the leader in Follow-the-Leader, he performed actions up to Level 4 (both hands off the saddle and moving). However, if Trevor was not the leader, he only copied actions up to Level 2 (one hand off the saddle and movement). In Session 1 Trevor attempted an action at a risk level of 4; he lost his balance and nearly fell off his pony. When attempting the same activity again, he remained at Level 4, though maintained better balance.

Figure 4 shows an increase in Trevor's performance in the routines of mounting and dismounting over the eight sessions. The mounting routine began at a 44% mastery level, increasing to 78% mastery. This was maintained for the last three sessions. The one step that Trevor did not manage to complete independently was to put his helmet on and buckle it up. Trevor would walk to the table, but would wait each week for someone to put the helmet on for him. Following Session 2, in which he completed no steps of the dismounting routine, Trevor demonstrated an increase in mastery. He reached a 75% mastery level for the final four sessions. Once again it was the helmet related step in the dismounting routine that prevented Trevor from

reaching 100% mastery. Despite instruction from helpers, Trevor could not undo his helmet, and would become frustrated, in the end asking someone to do it for him. In Session 5 Trevor swung his leg over the saddle to dismount before his helpers were ready. Trevor obviously knew the next step in the routine, but did not wait for those around him to prepare themselves.

As a result of increasing independence, a rider's general riding skills could also improve. This resulted in each child's experience more closely resembling that of a non-disabled rider. Though Trevor picked up his reins from Session 1, it was not until Session 5 that he began using them to turn the pony unprompted.

In Session 4 I worked on Trevor's use of verbal commands to make his pony go ("walk on") and halt ("whoa"). In previous sessions the person leading the pony had halted and moved the pony even if the rider had not given the command. In this session I did not halt or move the pony until Trevor had given the command, even if this meant discontinuing with the activity currently engaged in. By the end of the session Trevor was making the verbal commands unprompted, and this continued in the following sessions.

When there was time I also worked with Trevor to increase his general horse-mastership knowledge, such as the names of parts of the saddle, bridle, and pony. This was already part of the RDA programme. As a modification I changed the types of questions asked, and introduced a few new parts. Previously children had been asked "show me the" This allowed them to copy those around them rather than think for themselves. I asked "What is this?" while pointing to an object instead, requiring the rider to think of the name. When Trevor was asked "what are these?" (whilst I pointed to the reins), he thought about it for approximately 30 seconds, and replied "like rain drops", and with prompting came to the correct answer of 'reins'.

Trevor received a score of 4 for how much he benefited from the introduction of the programme. The major improvement for Trevor was his independence when riding. He especially appeared to enjoy using the reins to steer the pony. He also improved in his social interactions with those around him, maintaining increased eye-contact, and talking more to other riders and his helpers.

Helen

Helen's baseline enjoyment was at a frequency of around 10. This increased to over four times that by the completion of the project to reach a frequency of 42 (See Figure 5). There was a clear effect between the two conditions. Helen's vocabulary was limited, and she was disinclined to speak during the initial sessions of the project. Therefore, to enable her to make a choice I would hold two props and let her take one. For example, a bean-bag and cone would be presented to her. The number of options increased to five by the final session. From Session 5 Helen began to expect choice, she would point at activities as soon as she got on the pony, before choice was even offered. In Session 5 she had completed the Letterbox game and there were two spare letters on top of the letterbox. Instead of waiting to be offered choice she picked one up as soon as she had posted the one in her hand. In Session 6 Helen was given the cardboard letter in the no-choice condition, she gave it back to me and reached for the ring that was placed on the barrel on the other side of her.

In the initial stages of the project Helen was relatively non-verbal during her time at the RDA. She indicated her choice by picking up the object that represented her choice, and would not use the verbal commands to move and stop her pony. Despite my numerous and varied attempts at asking her to say "walk on", Helen would not. It is probable that Helen knew when the instruction was needed, as from Session 3 she would say "say it", look at me, and point to the pony. When eventually I would say "walk on" she would smile. In Session 2 we spent long periods of standing and not going till Helen said the command. As she would not actually say the command it was decided that the instructor would say the correct words and the riding would continue, otherwise the riding time would be minimal. It was hoped that Helen would eventually mimic the instructor as she does with other commands. Interestingly, in Session 3 Helen decided to lead her pony back to the tie-ups once she had dismounted. When she pulled the pony it would not move, and then she said "walk on". This use of verbal commands when leading continued for the remainder of the project, but could not be transferred into the riding part of the session. If Helen was pressured too much to say "walk on" she disengaged, looking down at the ground and would not make eye-contact till an activity was started.

Helen's general verbalisations and talking increased throughout the programme. She not only started speaking when riding (For example: "this one?", "count", "out", "ready set go", "cone"), but also in informal situations, telling me about school, and talking about her birthday. Her communication became more effective during the riding sessions as she began to speak and point more to ask questions and indicate choice.

Figure 6 shows Helen's level of inattention. This fluctuates between 0 and 5. Helen's main distractions appeared to be aeroplanes and the tactile stimulation of the horse. The irregular pattern of inattention levels may be related to the days in which planes flew over the arena. Helen liked to place her face on the horse, and would do so at times that were not appropriate, such as when she was supposed to be unsaddling the horse. She would also do it in places where it was not safe, such as the horse's flank. It was explained to Helen that this was not safe as the horse may not like it and kick her. Helen's frequency of placing her face on the horse appeared to decrease as time progressed. If she did, it was mainly towards the front of the horse, and therefore much safer.

The level of risk Helen engaged in whilst performing activities remained at a constant mean score of 2 (see Figure 7). My observations did not record her varying from this score in any activity. Though it was not part of this measure, it is worth noting that the only risk Helen took was when she placed her face on the pony's flank, or walked too close behind the pony.

Figure 8 shows a general improvement in Helen's mastery of routines. She began at a mastery level of below 50% in both routines, and gained 100% mastery in both routines by the final session. Helen differed from the other participants in that she took the gear off her pony as part of her routine. This was possible as Helen had a one-on-one session, allowing me more time to work with her. Helen appeared keen to learn how to take off her pony's gear. It was not till Session 5 that she could do this unprompted. Helen did receive some help as she could not lift the girth high enough to unbuckle it. The step was considered mastered as she initiated it and was not physically capable of completing it unassisted. In Session 3 Helen chose her helmet

and placed it on her head, though it was on backwards. This was praised as it was the first time she had put it on, and the correct way was explained to her. In Session 5 Helen successfully completed the step of putting on her helmet and doing it up.

Helen demonstrated that she knew the steps of the routines, but would sometimes perform them out of order. For instance, she once climbed the mounting block without her helmet being buckled, and on another occasion took her helmet off before being dismounted. In these cases the correction was made before she was allowed to continue. Helen often failed to wait for her helpers to be ready when mounting. She knew that she was supposed to swing her leg over the pony when on the mounting block, but on two occasions ended up on the pony's neck, in front of the saddle as she had not waited for her helpers to assist in guiding her down on to the pony.

Figure 9 shows the mean number of prompts Helen needed when completing an activity. The mean number of prompts needed shows a general decrease from the first session to the last. In the initial sessions Helen would need numerous prompts (up to 12) before she would complete an activity. These prompts were both verbal and physical. This reduced greatly; the mean number of prompts was less than 1 in the final three sessions. The decrease in prompts appeared to coincide with my observations of her looking around more, concentrating on my instructions for the activity. In Session 6 Helen was meant to ride to the bucket, however the leader led the pony towards the letterbox. Helen was quick to correct them as they rode towards the wrong object. This shows Helen was aware of the task, understanding the instructions.

Helen has been given a Level 5 for how much she benefited from the introduction of the programme. The introduction of choice gave Helen a reason to increase her communication with others. She appeared to enjoy the opportunity to make choices as she expected and took them even when not offered. The clear effect between the two choice conditions supports this observation. Her mastery of both routines reached 100%, and she especially appeared to enjoy leading and un-gearing her pony.

Sally

Sally's data does not include baseline measures as she was away for the first two weeks of the project. Figure 10 shows a general increase in level of enjoyment. Session 2 has a higher level of enjoyment for the no-choice than the choice condition. Session 5 has the highest level of enjoyment for both the choice and no-choice conditions. There is no apparent link with these occurrences to the other variables under investigation in the project. In Session's 2 and 5 There is not a large difference between the levels of enjoyment experienced in the choice condition compared to that of the no-choice condition. This indicates the effect is not as strong as in other sessions. Sally was able to make choices when presented with options verbally by the riding instructor. She was initially given two options, and then progressed to a choice between all activities in the later sessions. Sally appeared to spread her choices about, never picking the same one twice, and not picking the same activity as the rider before her.

Figure 11 shows a reasonably steady mean level of risk, with five out of six sessions receiving a score of 2. Session 3 received a score of 3. During this session Sally would often lean too far, or take both hands off the saddle when performing activities. When compared with Figure 10, it can be noted that Session 3 also produced some of Sally's lowest scores for level of enjoyment.

I noted that when Sally was performing the Bean-bag, Letterbox, Cone, and Ring games, she would hold the object in the hand furthest away from where she was meant to be placing it. Sally also often reached out to remove or place items on the pole before the pony had halted completely. This compounded her balance problem. Though these actions appeared to increase risk for Sally, as she almost fell off several times, she did not change her methods. Though the riding instructor and side-walkers suggested an easier way to complete the activities, this did not influence Sally in any way.

Figure 12 illustrates the quick rate at which Sally achieved 100% mastery of the dismounting routine. She started at 0% mastery, and had completely mastered the routine by Session Four. Her mastery of the mounting routine also increased, though

at a slower rate. Sally started at 44% mastery, and maintained 77% mastery for the final two sessions. There did not appear to be a specific step that Sally could not master in the mounting routine, the step not completed differed in each session. Sally mastered the first step of going to the table and selecting her helmet from Session 3 onwards. In Session 3 the helmets were not on the table as it was raining, when Sally saw this she asked where the helmets were, indicating she knew she had to pick up her helmet before she could ride.

Sally interacted well with other riders and her helpers from the beginning of the project. She also had a high level of unprompted use of the verbal commands “walk on” and “whoa”. Sally did appear to become impatient when activities were being explained if she felt she knew the activity, saying “I know what to do”. In an attempt to improve Sally’s general riding skills she was encouraged to use the reins to steer her pony. This had been practiced in sessions previous to the implementation of the project. Though Sally would steer her pony when verbally reminded by the instructor, if prompting ceased she would not, appearing to either lose interest or forget. This was especially evident if she was concentrating on another activity.

A Level 3 was given to Sally for the level of benefit she received from the choice programme. Though her enjoyment level increased, the effect between the two conditions was not as large as with other participants. However, she did appear to benefit from learning the routines. She became more independent when mounting and dismounting, though did not perform consistently when using the reins to steer the pony.

Jane

Baseline data was not collected for Jane as permission for her participation was gained half-way into the project. Figure 13 shows a general increase in enjoyment levels for the choice condition. There is a significant difference between the two conditions, indicating the positive effect choice had on Jane’s experience. Compared to the other sessions, the frequency of expression of enjoyment in Session 2 is high for both the choice and no-choice condition. Jane was able to make choice by selecting a prop and by the instructor verbally offering choice. She was able to

answer the open-ended question of “what activity would you like to do now?”. Though Jane’s data shows she enjoyed making choices, based on my observations it can be assumed that she also enjoyed new activities and achieving success. Jane was noted as verbally expressing her enjoyment when introduced to a new game: “I like that one”. She further expressed this enjoyment by selecting the new game when it was included in choice opportunities. The pony Jane rode was slow, which often left her in last place when competing against the other riders. This caused frustration for Jane, and she often commented on how her pony was too slow and she was always last. With the help of the person leading her pony, she fine-tuned her performance, so she was not left so far behind. In Session 2, Jane practiced taking the cone off the pole and dropping the bean-bag in the bucket as she rode past it instead of coming to a complete halt. The joy at being able to achieve this was evident by her facial expression and her comments. Jane constantly assessed her performance, saying “that was better”, or “I should of...”.

Figure 14 shows that the level of risk Jane engaged in remained constant throughout the project. Even when she was performing activities without her pony coming to a complete stop, she did not put herself at greater risk. Jane would still keep one hand on the saddle and would not lean any further than she would of normally to complete the activity.

As Jane had been coming to the RDA for some time before the project (six years), she already had a high mastery of the mounting and dismounting routines. Both started at over 65% mastery, the mounting routine reaching 78% mastery, and the dismounting routine progressing to 100% mastery. Apart from Session 3, the mounting routine stayed at a constant mastery level of 67%. The steps that were not completed in the mounting routine were: a) letting down the stirrups, and b) checking the position of the mounting block. Jane was initially reluctant to run her stirrups up at the completion of her ride, as she knew the rider after her did not use stirrups and they were taken off the saddle. However, I talked to her about how it was part of the riding process, and she completed this step in the following sessions. Jane was capable of dismounting herself, but would wait each session for me to be present when she got off her pony.

Jane received a Level 3 for the amount she benefited from the introduction of the programme. The major improvement for Jane was her enjoyment when riding. The final session increased by twice that of the initial session. Her mastery of routines was already high and Jane was already using the reins to steer her pony. Therefore, previous to the implementation of the programme, she was already quite independent when riding.

David

David rode on alternate weeks, which limited his participation to three sessions. Baseline data is not available due to his limited time in the project. Figure 16 shows the increasing rate of David's enjoyment. Though his enjoyment is at a lower level when compared to some of the other participants, the enjoyment level still shows a clear difference between the two choice conditions. Session 3 shows a particular difference, where David clearly enjoyed the session more when he was given choice opportunities. Both conditions show an increase in enjoyment from the first session to the last.

David's level of inattention appears to increase over the three sessions (see Figure 17). David had particular difficulty sitting still, even when the pony was moving. He was also observed trying to take cones off poles as he rode past when it was not part of the activity he was participating in at the time.

Figure 18 shows David engaged in a relatively constant level of risk. Sessions 1 and 3 had a mean score of 2, whilst Session 2 had a score of 1. On one occasion David's pony shook and he almost fell off. Even though this put David at risk of hurting himself, he smiled and appeared to enjoy the experience.

Figure 19 shows that David increased his mastery of both the mounting and dismounting routines in a short period of time. The mounting routine showed the greatest difference, going from 25% to 63%. David became more independent with the dismounting routine, though the difference between his initial and final mastery was not as large. He went from 50% to 75% mastery. David had difficulty completing the steps in both routines that involved the helmet.

A Level 3 was given to David for the amount of benefit he received from the introduction of the programme. Even though David's level of enjoyment increased, his inattention did not decrease with the introduction of choice. His mastery of routines improved, though only slightly. Further sessions may have given a clearer indication of the effects of the programme on his experience and behaviour.

Harry

Harry attended the RDA on alternate weeks, the low number of sessions he participated in did not allow for baseline data. Figure 20 shows the increasing level of enjoyment that Harry experiences over the three sessions. The difference between the two conditions is small, suggesting that the choice condition did not have as greater effect on Harry's enjoyment as it did on other participants. There is a large increase in enjoyment for both conditions, producing a steep gradient in Figure 20. Harry smiled frequently, though it was mostly at times while he was engaging in undesirable behaviour. Thus it was not related to the riding activity and not collected as data.

Harry was able to express choice, though only if he was presented with tangible options, such as the actual bean-bags or cones. Harry would sometimes express choice at inappropriate times, such as saying he wanted to ride a different pony other than the one he was assigned to. This request was denied, as it impacted on the other riders, and the pony Harry rode was chosen for him due to his behavioural issues.

Harry displayed a high level of undesirable behaviour throughout his three sessions (see Figure 21). In Session 1 he was taken off his pony early as he would not keep still, and was upsetting the pony. Harry kept moving his legs about, causing the pony to walk off and put its ears back. Harry was oblivious to the pony being uncomfortable, even though the effect he was having on his pony was explained to him. Session 2 shows the lowest rate of undesirable behaviour. During this session Harry's pony was kept moving and he did not join in all of the games. This was as his undesirable behaviour increased when the pony was halted. Harry rode the entire time of Session 3, though his undesirable behaviour did increase towards the end of the session.

Harry's risk level ranges between a mean score of 2 and 3 (see Figure 22). As Harry's undesirable behaviour increased, it was observed that he tended to take both hands off the saddle. He would also play with the props rather than carry them quietly, for example, squashing the cone and holding it up to his face. When playing Follow-the-Leader Harry would not copy the leader's actions. Unfortunately, Harry did not have the opportunity to be the leader during the project, so it was not observed whether he would do the actions if he was the leader. Harry was capable of completing all the other activities, and had good use of the verbal commands "walk on" and "whoa".

Harry did not achieve a very high mastery of the routines, though they did both improve (see Figure 23). His mastery of the mounting routine started at 0%, and reached 33%. The dismounting routine began at 20% mastery, and reached 40% in Session 3. In both routines Harry failed to master the steps involving the helmet, or those requiring him to swing his leg over to mount or dismount.

Harry received a Level 2 for the amount he benefited from the introduction of the project programme. Though his enjoyment level increased, the effect between the two conditions was small. Also, his level of undesirable behaviour increased, and his mastery of routines was not great.

Daniel

Daniel attended the RDA on alternate weeks, and was therefore involved in four sessions relating to the project. Baseline data was not recorded. Daniel's expression of enjoyment increased in Session 2 for the choice condition, and Session 3 for the no-choice condition. Enjoyment levels then proceeded to decrease till the final session, creating two downward data curves (see Figure 24). The data range of the no-choice condition (12-16) is smaller than that of the choice condition (15-27). Though the expression of enjoyment did decrease over the four sessions, the difference between the two conditions stayed relatively large. This indicated there was an effect of the choice condition producing more enjoyment for Daniel than the no-choice condition. Daniel was a very competitive rider, expressing joy when he

won games, regardless of whether it was in the choice condition or not. He would also talk about how he was going to win, and how he liked winning.

Daniel appeared to enjoy acting up to the camera, and to those working with him. As these expressions of enjoyment were not related to the riding activity or the choice conditions they were not considered valid data. Throughout the project Daniel would tell his pony “good boy”. When corrected, as his pony was a girl, he would laugh and continue to say “good boy”. He would also play around, counting objects wrong (1, 2, 2, 3, 4, 5, for example) or saying colours wrong when he knew the correct answer. Daniel would laugh when he was corrected, appearing to enjoy the reaction of the person he was working with.

Figure 25 shows a reasonably steady rate of inattention. All of the sessions received a score of 3, except Session 2 which received a score of 2. Daniel’s main distraction was lying down on the pony. He also talked to others when instructions were being given by the riding instructor. Though it appeared that Daniel was not listening to the instructions, he always understood the activity and did not need the instructions to be repeated.

The level of risk that Daniel engaged in increased over the four sessions (see Figure 26). However, this increase was slight, going from a mean score of 1 to a mean score of 2. In Sessions 1 and 2 Daniel kept missing the bucket when trying to drop the bean-bag in. However, he did not attempt to correct himself by leaning further over to achieve better aim. In Session 2 he claimed he could not reach the pole to place the cone on top, and would not lean to reach it. After coaxing from the helper he did manage to complete the activity. In Session 3 Daniel was offered a choice within the Bean-bag activity. After riders cross the finish line they are supposed to hold up one hand as an indication that they have finished. On this occasion Daniel held up two hands, doing the action in a more risky way than necessary.

Daniel’s mastery of both routines increased over the four sessions (see Figure 27). The dismounting routine showed the greatest increase, going from 0% to 100% mastery. The mounting routine went from 10% to 70% mastery. In the mounting routine Daniel failed to master the initial step of walking to the table and selecting his

helmet. This was possibly due to him becoming distracted as soon as he walked in the gate. However, once the routine was initiated, his focus on the task at hand increased.

A Level 3 was given to Daniel for the amount of benefit he received from the introduction of the project programme. Though his level of enjoyment did decrease, the effect between the two conditions remained reasonably steady. His mastery of routines increased, and his inattention and risk level did not differ greatly from the initial session to the last.

Lisa

Lisa participated in six sessions for the project. The first two sessions provide baseline data. Figure 28 shows her enjoyment increased over the project in both the choice and no-choice conditions. The increase is parallel, indicating a strong effect. The baseline enjoyment levels also increase, suggesting a carry-over effect on her positive experience of the riding sessions as time progressed. This is possibly due to her increased confidence. In the beginning Lisa did not make any positive verbalisations, as the sessions continued she started to laugh and make positive sounds as she smiled. Lisa expressed joy when she successfully completed an activity. She did this by clapping and smiling. Lisa was able to make choices, which she did by selecting an object when they were presented to her. The number of options progressed from two to five. Lisa would deliberate her choice, sometimes selecting one object, then changing her mind.

Figure 29 shows a gradual increase in the level of risk that Lisa engaged in whilst performing activities. This went from a mean score of 1 to 3. In the early sessions Lisa would grip the saddle with both hands, reluctant to take one off to complete an activity. She also would not look at the object she was working with, for example the pole onto which she was placing the cone. As time progressed, Lisa began to take one hand off to point to objects. Also, when she completed physical activities she reached out further and made bigger movements. In the two final sessions Lisa had to be reminded on several occasions to keep at least one hand on the saddle while the pony was moving. This increase in risk coincided with her decrease in crying and prompts needed, and increase in enjoyment and independence.

Lisa progressed in both routines (see Figure 30). Mastery of the mounting routine increased gradually, going from 33% to 100% mastery. Lisa began on 0% mastery of the dismounting routine, which continued for the first three sessions. By Session 6 Lisa had reached 100% mastery. In Session 4 Lisa put her foot in the stirrup to mount for the first time. This session was also the first time she thanked the horse and helpers unprompted, she did this with sign language.

When Lisa first began the project programme she needed a number of prompts before she would complete an activity. These prompts were both verbal and physical. Figure 31 shows how the number of prompts required decreased over the project sessions. The final three sessions maintained a mean score of 4. The Letterbox game was introduced to Lisa in Session 4. She found this quite difficult and needed prompting to hold the letter the correct way so it would fit in the slot. By the final session Lisa worked out the correct method and no longer needed prompting in order to hold the letter correctly. Interestingly, when Lisa was having difficulty with this game, she never selected it as a choice option. However, once she had mastered the game she began choosing it as an activity.

Figure 31 shows the decrease in the number of incidents when Lisa cried during riding sessions. Crying was usually triggered by loud noises, such as the pony snorting. In later sessions Lisa was observed as being nonchalant when the pony snorted or there were loud sudden noises. From Session 2 onwards Lisa's mother side-walked with her. This appeared to have a calming effect on Lisa. In the final three sessions Lisa did not cry at all, even when the pony shook and she almost fell off. Her confidence with the pony also increased. In the initial sessions Lisa did not want to touch the pony while she was on the ground, by the end of the project she would stand next to it and pat its face and neck.

Lisa received a Level 4 for how much she benefited from the introduction of the programme. Her enjoyment increased and crying decreased. A clear effect of the programme is demonstrated between the two choice conditions. The choice opportunities required her to communicate more with the instructor, and allowed her to participate in the activities she felt most comfortable with. Her independence also

increased; Lisa achieved 100% mastery in both routines. Lisa's major improvement was in her confidence while riding. However, this was not a measured variable of the project.

Comparisons across Participants

All the participants showed an effect of the choice condition compared to the no-choice condition. This was stronger in some participants when compared to others. Seven of the eight participants experienced a general increase in enjoyment, Daniel being the only one who did not.

Of the four participants who were measured for levels of inattention, Trevor, Helen, and David produced a fluctuating data pattern showing no clear effect. Daniel's level of inattention remained constant. Trevor's rate of inattention did decrease from his baseline level.

The measure of risk remained relatively constant in all participants. Daniel and Lisa experienced a slight increase, and Trevor a slight decrease.

All participants improved in their mastery of routines. Five of the participants achieved 100% mastery in at least one routine.

Helen and Lisa were observed in relation to the number of prompts needed to complete activities. Both of these participants experienced a decrease in this variable. Helen reached a mean score of 2 for two of her sessions.

Graphed Representations of the Data

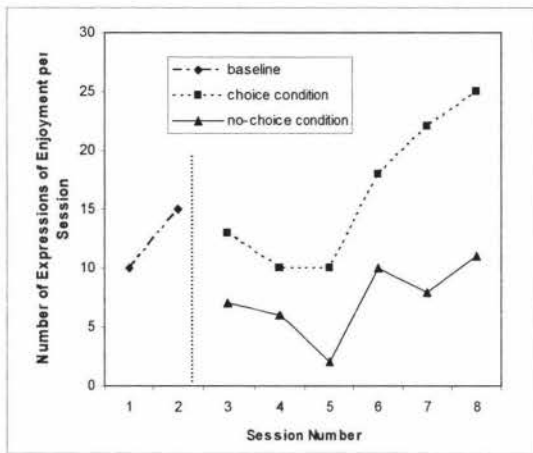


Figure 1: Trevor's frequency of expression of enjoyment.

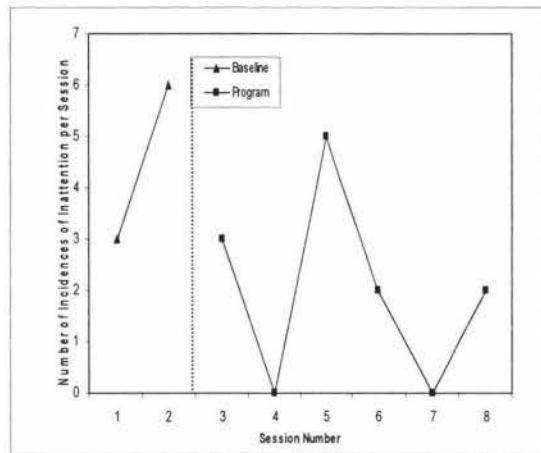


Figure 2: Trevor's frequency of incidents of inattention.

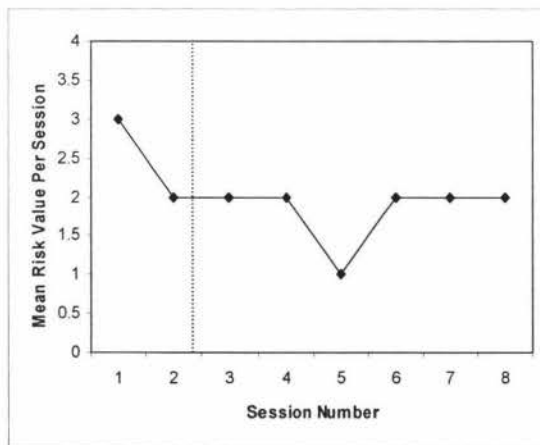


Figure 3: Trevor's mean level of risk.

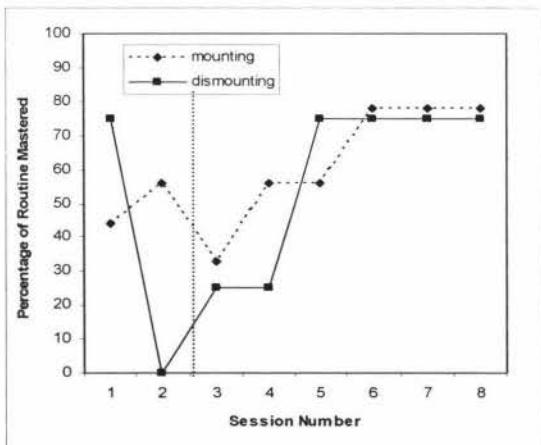


Figure 4: Trevor's mastery of routines.

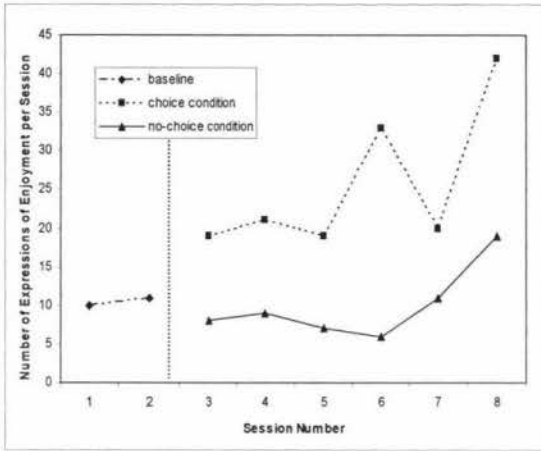


Figure 5: Helen's frequency of expression of enjoyment.

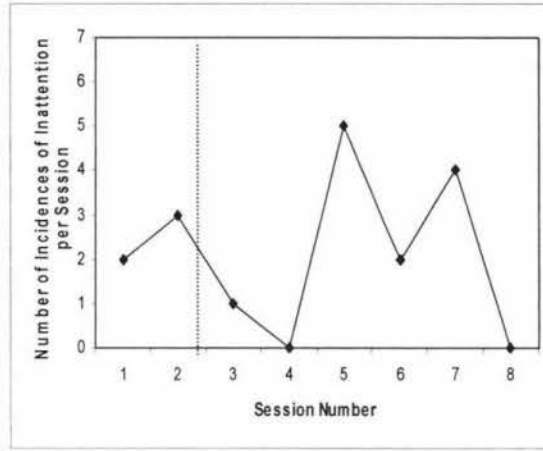


Figure 6: Helen's frequency of incidents of inattention.

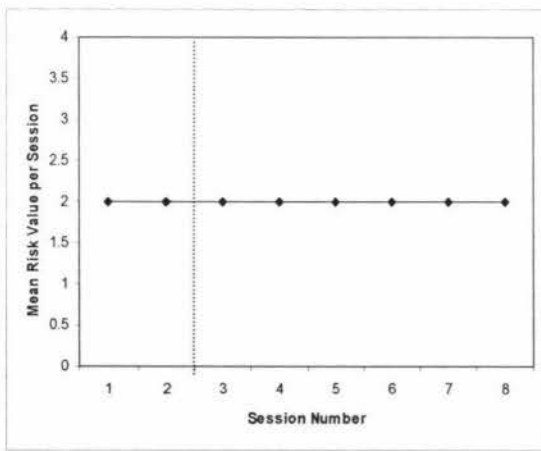


Figure 7: Helen's mean level of risk.

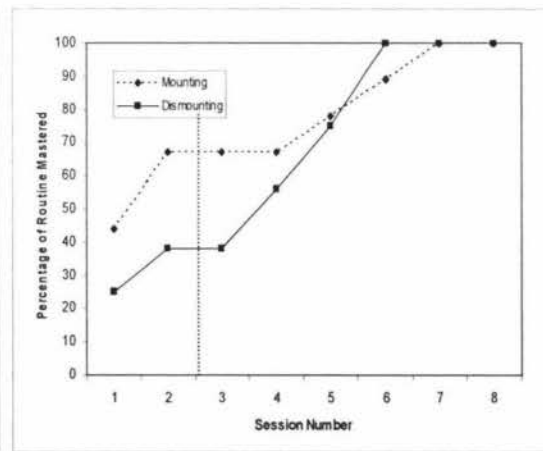


Figure 8: Helen's mastery of routines.

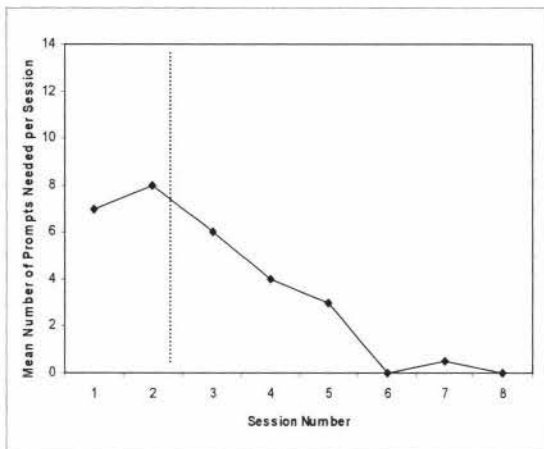


Figure 9: Mean number of prompts needed by Helen.

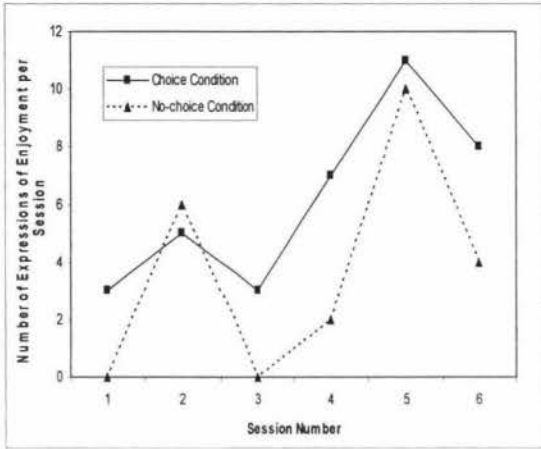


Figure 10: Sally's frequency of expression of enjoyment.

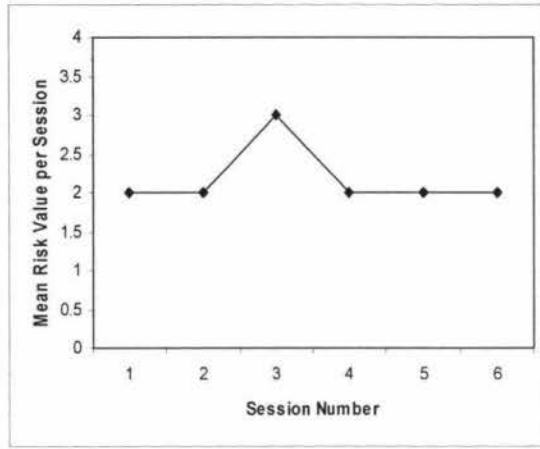


Figure 11: Sally's mean level of risk.

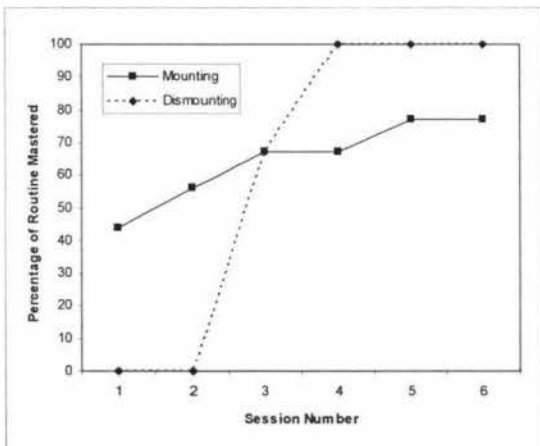


Figure 12 : Sally's mastery of routines.

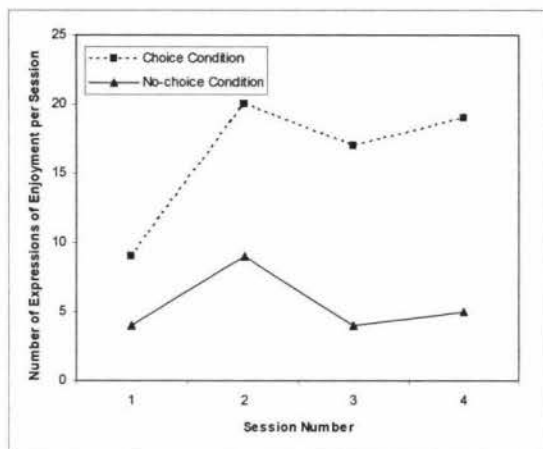


Figure 13: Jane's frequency of expression of enjoyment.

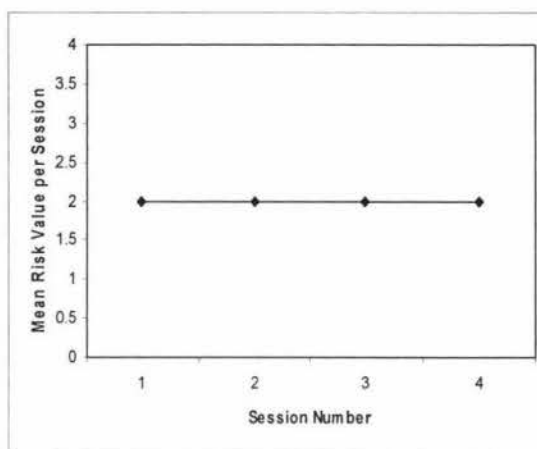


Figure 14: Jane's mean level of risk.

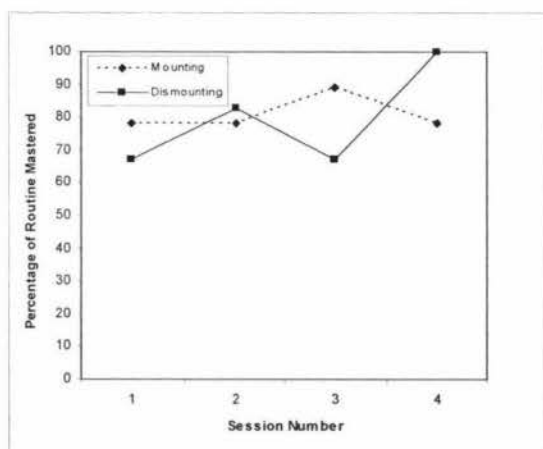


Figure 15: Jane's mastery of routines.

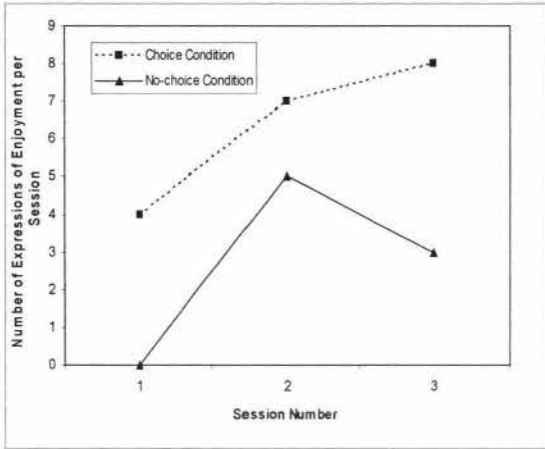


Figure 16: David's frequency of expressions of enjoyment.

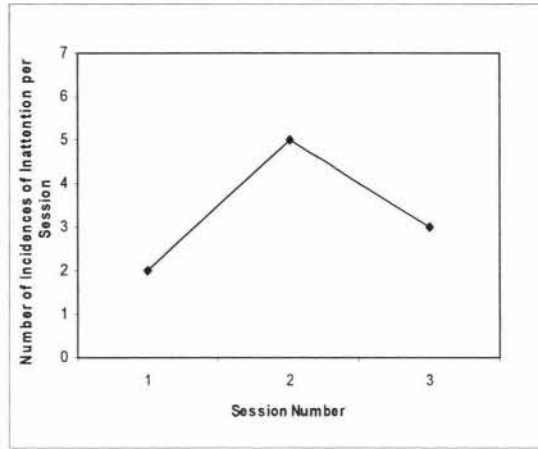


Figure 17: David's frequency of incidents of inattention.

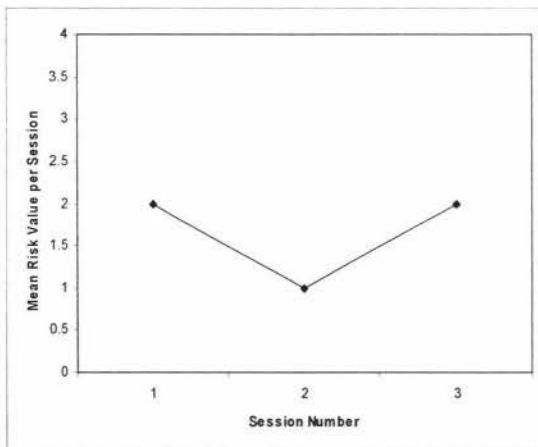


Figure 18: David's mean level of risk.

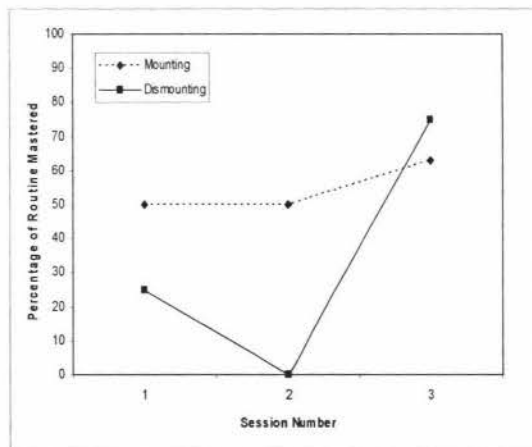


Figure 19: David's mastery of routines.

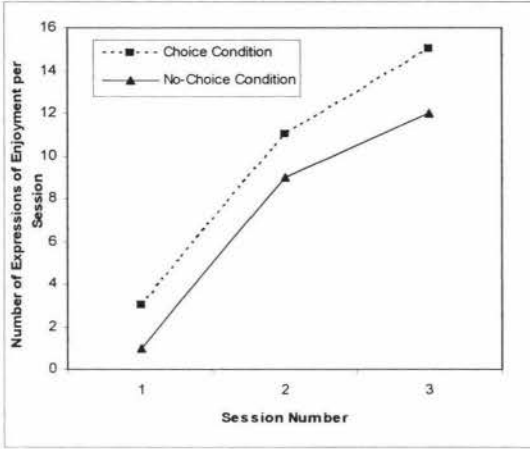


Figure 20: Harry's frequency of expressions of enjoyment.

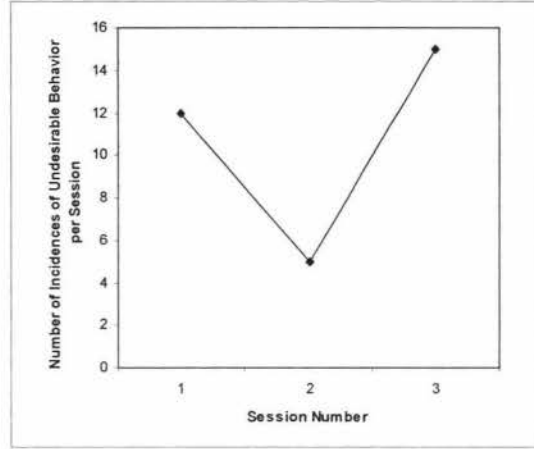


Figure 21: Harry's frequency of incidents of undesirable behaviour.

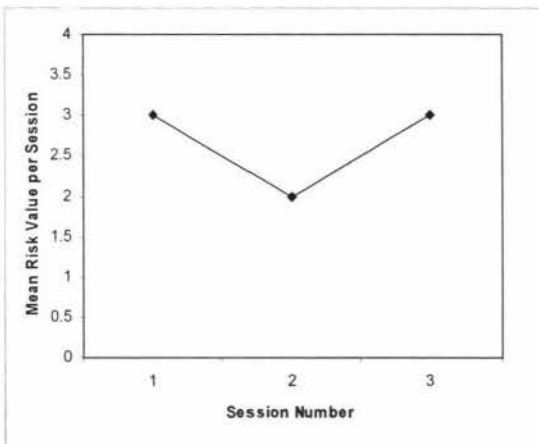


Figure 22: Harry's mean level of risk.

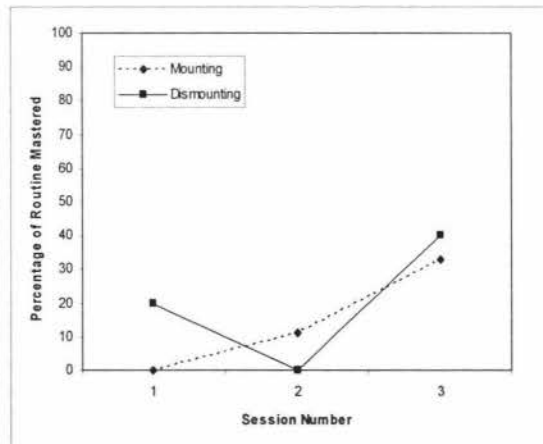


Figure 23: Harry's mastery of routines.

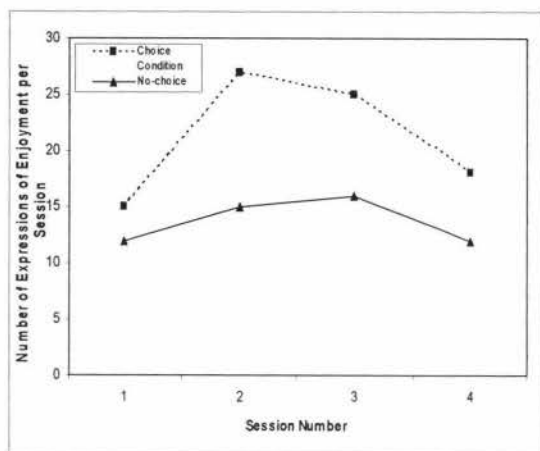


Figure 24: Daniel's frequency of expressions of enjoyment.

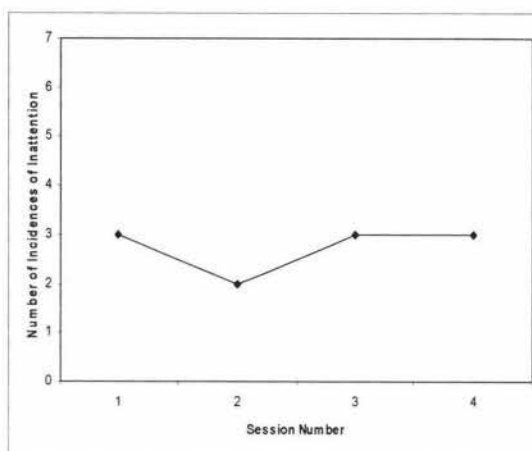


Figure 25: Daniel's frequency of incidents of inattention.

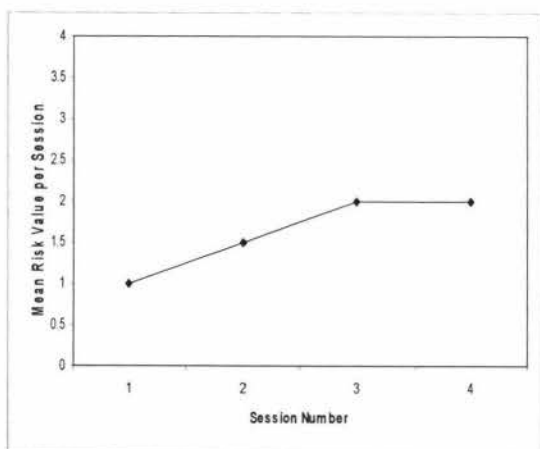


Figure 26: Daniel's mean level of risk.

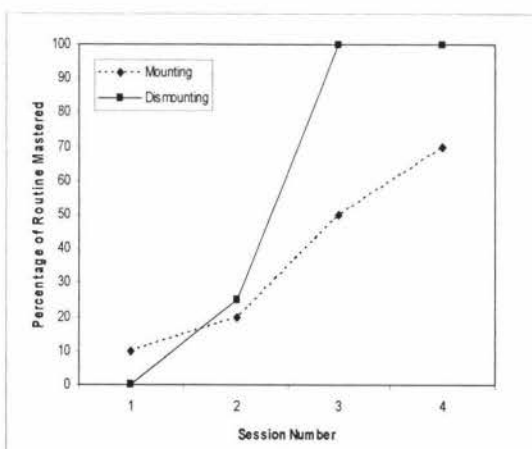


Figure 27: Daniel's mastery of routines.

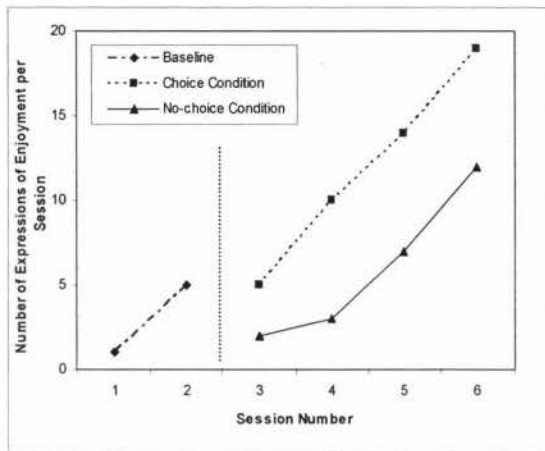


Figure 28: Lisa's frequency of expressions of enjoyment.

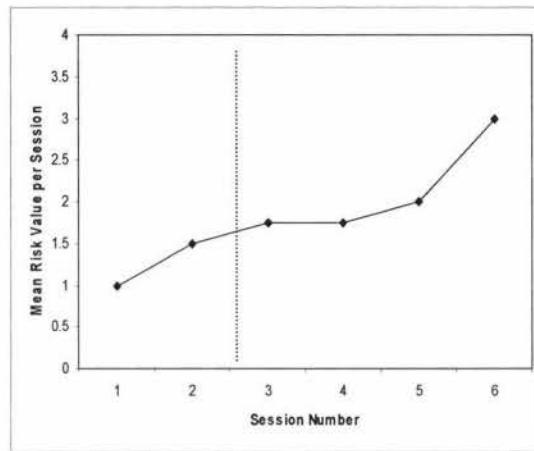


Figure 29: Lisa's mean level of risk.

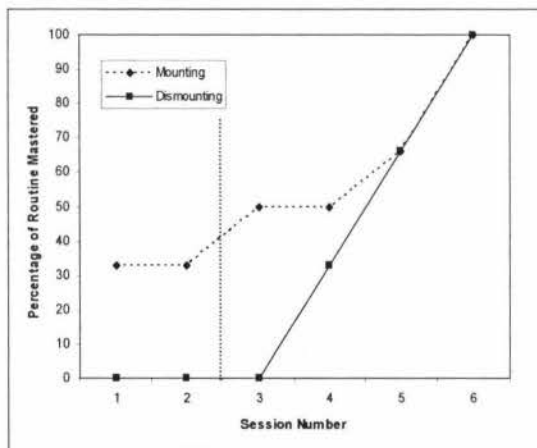


Figure 30: Lisa's of mastery of routines.

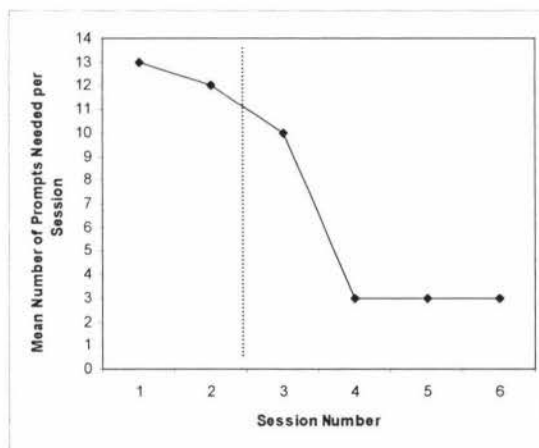


Figure 31: Mean number of prompts needed by Lisa.

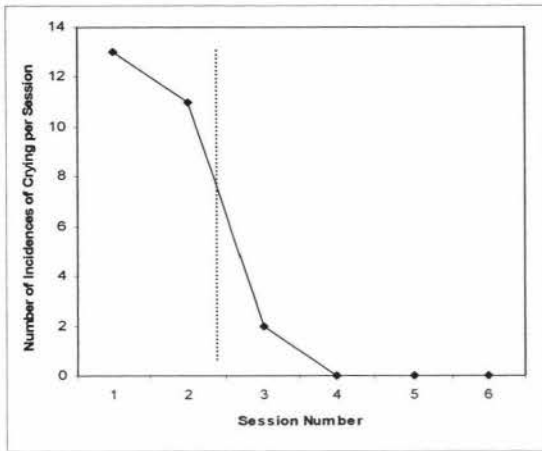


Figure 32: Lisa's frequency of incidents crying while riding.

CHAPTER 4. DISCUSSION

Summary of Findings

The present study investigated the concepts of choice, independence, and risk when working with children with disabilities. Overall the results of the present study support the idea that children with disabilities experience increased levels of enjoyment if they are given choice opportunities, and that they are capable of increasing their independence if given training and opportunity. Furthermore, the results indicate that children with disabilities will not expose themselves to increased risk if allowed to make their own choices and become more independent.

Seven of the eight participants experienced a general increase in their experience of enjoyment during the riding sessions. Daniel experienced a decrease in enjoyment half-way through the project. All the participants showed a clear difference in the level of enjoyment experienced in the choice condition compared to the no-choice condition. This effect was stronger in some participants than in others. This supported the hypothesis that the introduction of choice would increase enjoyment. The results of the current project concur with existing research advocating choice opportunities for children with disabilities (Kearney & McKnight, 1997; Lancioni et. al., 1996; Bannerman et. al., 1990; Dyer et. al., 1990; Bambara, 2004). Every participant was capable of making choices, and willing to communicate their wishes. Two participants required a tangible object to make their choice, the others responded verbally. The number of choice options began at two, increasing to five as choice-making skills developed. Both Sally and Jane were able to answer the open ended question of "What activity would you like to do now?"

Trevor, Helen, and David showed fluctuating levels of inattention over the project duration. Daniel's inattention level remained constant. Harry's level of undesirable behaviour did not show a clear pattern, though this is possibly due to the limited number of sessions he participated in. These data do not coincide with current literature that claims inattention and undesirable behaviour decrease with the introduction of choice (Bambara, 2004).

It was hypothesised that with the introduction of choice and increase in independence participants would experience an increase in feelings of control and confidence. It was thought that participants would then take more risks. The results of the current project do not support this hypothesis. Every participant showed a reasonably steady level of risk throughout the project. Both Helen and Jane remained at a constant mean score of 2. Trevor's mean risk score decreased over his eight sessions, and the mean risk scores of the other five participants did not vary by more than 1 during their participation in the project. No risk levels received a score greater than 3.

Every participant increased their mastery of routines, thus increasing their independence. This showed that the participants were capable of becoming more independent when riding. It was hypothesised that increasing independence would increase levels of enjoyment. This may have contributed to the continuing increase of frequency of expressions of enjoyment over the project duration. Helen, Sally, Jane, Daniel, and Lisa reached 100% mastery in at least one of their routines. This substantiated the claim that children with disabilities could learn to initiate and complete components within a routine (Evans, 1999). Many of the participants experienced difficulty with the steps involving the helmet. In my observations previous to the implication of the project, it was noted that these steps were often quickly completed by the helpers due to the time limits imposed on the riding sessions. Therefore, these steps may take longer to be mastered as the effects of the helper's actions may be long term.

Steering the pony further increased rider's independence. Trevor and Jane both steered their pony without prompting. Sally would steer her pony, though only if continually prompted throughout the riding session. Trevor began steering his pony from Session 5. Following this session his enjoyment levels increased at a larger rate than in previous sessions. During my observations I noted that when Trevor was the leader in Follow-the Leader he would smile constantly and turn around constantly to check if the other riders were copying his actions. It is my opinion that being the leader increased Trevor's feelings of control, and that he enjoyed this opportunity. Further support for the benefits of being in control became apparent when observing Helen. She would not use the verbal commands to make her pony go or stop when

mounted. However, when leading her pony she would use various verbal commands to ask her pony to walk on. I propose that when mounted, Helen does not experience the same feelings of control as when she is on the ground leading her pony. Helen probably realises that no matter what she does when mounted, ultimately the leader of the pony has control, but that when she has the lead-rope in her hand, it is up to her to move the pony.

The hypothesis that the participants would become increasingly independent over the project was further supported by the decreasing number of prompts needed by Helen and Lisa. Both participants decreased their number of prompts needed to less than half of the number needed in the beginning of the project. This appeared to coincide with their increase in effective communication and concentration on instructions for activities.

Though it was not a measured variable in the project, the confidence of each participant appeared to increase over the project. This was especially evident with Lisa. By Session 4 Lisa had stopped crying, and had to be reminded to have at least one hand on the saddle when the pony was moving. This was a marked difference to the initial sessions where she gripped the saddle with both hands, and was reluctant to take even one off to complete an activity.

The results of the current study show that with slight modification, the riding programme used at the RDA has the potential to increase enjoyment and independence in their riders. This would help maximise benefits that the riders gained from their time at the RDA.

Implications for Theory, Research, and Practice

The findings of the current study add support to the growing body of literature and research on the benefits of introducing choice opportunities for children with disabilities. The programme used in the current project gave choice opportunities between and within activities. The number of options increased as the participants became more proficient with the choice-making process. This was in accordance with Shevin and Klein's (1984/2004) claim that choices must advance in order to remain

relevant to the child, and retain the positive benefits they produce. If the RDA was to continue with the programme of the current project, theoretically the choice opportunities should increase, and be transferred to other aspects of their riding experience. This would further increase the rider's feeling of control, and continue to develop their choice-making skills.

The current project programme meets the general requirements for the eight steps involved in making a choice, as discussed in the Introduction and Literature Review (Field, 1996). Participants appeared to be aware of their preferences, appreciated and recognised choice opportunities, understood the options available, and were able to select the alternative they wanted. The introduction of goal setting would develop the current programme further to conform with Field's (1996) expectation of choice opportunities.

Choice-making is an essential part of self-determination, which is closely related to the development of independence (Kleinert & Kearns, 2001). Though the choices made in the current project may appear to have little relevance to the wider context of the participants' lives, the results show that children with disabilities are capable of making choices. The act of choosing allows those with physical disabilities to exercise decisional autonomy (Cardol et al., 2002). Though they may never be able to become as independent as more typically developing children, psychological control is created when choices are made. If the lives of non-disabled people are examined, it becomes apparent that they too retain decisional autonomy whilst purposefully relinquishing executional autonomy. For example, wealthy people have their breakfast made for them by kitchen staff. How is this different from a child with a physical disability deciding they want jam on their toast, and getting their mother to make their breakfast for them? By allowing children with disabilities choice we are normalising their experience. Disabled or not, everyone lives in a state of interdependence. It is the act of allowing the assistance that contributes to quality of life.

When developing independence children become aware of their limitations. Children with disabilities are often denied this opportunity, therefore it is plausible to assume they will put themselves at increased risk when first allowed choice opportunities.

The results of the current project do not support this idea. Despite the introduction of choice and increase in independence, the participants did not expose themselves to any unnecessary risk. This refutes claims that allowing children with disabilities access to choice will have detrimental effects, as they will make choices that have impact negatively on their well-being. The RDA provided a context for safe mistake-making, as the choices available were relatively low-risk. Support was also available at all times if risks taken had adverse consequences. As the participants had all attended the RDA for sometime previous to the implication of the project, it is possible that they were already aware of their limitations when riding, thus resulting in the low levels of risk engaged in while performing activities.

The present study demonstrated that the RDA was a viable context for investigating the concepts of choice, independence, and risk. Wollrab (1998) suggested that once choice skills were developed, they could be transferred to other environments. Therefore, the choice-making skills and increase in independence could theoretically be utilised in other areas of the participant's lives. The fact that the participants did not demonstrate increased levels of risk advocates for the use of choice opportunities as way of increasing independence.

Limitations of the Present Study

Many of the limitations in the present study are related to the project methodology. The limited number of participants' families who granted permission to participate in the project restricted the type of design that could be used. Eight single-case studies were favoured over an experimental group design due to participant numbers, and the differing days they attended the RDA. A reversal-replication design would have indicated clearer effects of the project programme, but the limited session numbers required the participants to act as their own control in an alternating treatment design. Furthermore, all of the participants had attended the RDA for some time prior to the implementation of the project. It is unclear whether this affected the results. On the positive side, the participants did represent a varied age range (6-16 years), and a variety of disabilities and disorders.

Only three of the eight participants had full baseline data. This was because three of the other participants attended on alternate weeks, and two granted permission once the project had started. This limited the number of sessions they participated in, the collection of baseline data would have further limited the time exposed to the project programme. Data of those participants who attended a limited number of sessions tended to fluctuate. Further sessions may have given a clearer indication of the effect of the project programme.

Implications for the RDA

The current project has positive implications for the RDA. The data suggest that with slight modification, the programme used can provide increased enjoyment for riders, and increase their independence and general riding skills. The results of the current project indicate that riders enjoy choice opportunities when riding. In accordance with the current literature and research in the area, the RDA should now look at developing the number and level of choices made available to the riders. This will further develop their choice-making skills. Following the completion of the project the RDA instructor is continuing to use choice in the riding programme. By using choice within an activity, the riding instructor discovered one of the riders knew colours. This knowledge is now used when explaining activities. This incident demonstrates how allowing choice not only gives others insight into preferences of a child with disabilities, but also shows how we can underestimate their cognitive abilities.

Those participants with moderate disabilities enjoyed the choice opportunities, but also appeared to enjoy the challenge of new activities, and competition. Further introduction of new activities will increase the challenge, and therefore the enjoyment, of these riders. The modification of existing activities could also provide opportunities for riders to problem-solve and use knowledge they have gained in educational settings.

The improvement in mastery of routines is encouraging. Several of the participants achieved 100% mastery of at least one routine. This indicates it is possible for other

riders at the RDA to learn the mounting and dismounting routines. However, it is acknowledged that time and volunteer numbers may restrict this. As the steps involving the helmet appear to present difficulties, it is recommended that these receive the initial focus. If riders can become more proficient with routines, volunteers will have more time to help those less able.

Recommendations for Future Research

The first recommendation is that future research uses larger sample sizes, with either a control group or a reversal-replication design. The data gathered can then be compared systematically between the two choice conditions, with psychometric properties of the programme increasing. If the variables of inattention, undesirable behaviour, risk, prompts, and crying are analysed in relation to the choice condition they occurred in, clearer conclusions of the effect of the programme can be made.

Secondly, it is recommended that future research further investigates the relationship between choice and risk. This will hopefully support the premise that allowing children with disabilities choice will not put them in any danger. Further investigation of risk will also reveal whether risk is a child's way of challenging themselves, and whether they learn from decisions that yield less than desirable consequences. The choices made in the current project were relatively low risk. Presenting participants with choices that hold greater risk will allow researchers to investigate how much risk children with disabilities will expose themselves to.

Wollrab (1998) claimed that once choice making skills were learnt, they could be transferred into other environments. It is recommended that future research investigates whether choice making skills learnt in recreational programs are transferred into other areas of the participant's lives. For instance, Helen began to expect choice when she was at the RDA, making choices before they were offered. It would have been interesting to see if this occurred simultaneously in other settings.

Finally, further research is needed into the source of positive benefits from the introduction of choice opportunities. Current research and literature pose differing accounts for the beneficial results. The first explanation is that increasing choice

opportunities increases access to preferences (Fisher et. al., 1997; Lancioni et. al., 1996). Others argue that it is the intrinsic effects of making choices that produces the positive observable outcomes (Cole & Levinson, 2002; Carter, 2001). Further research will help understand if it is one, or both of these phenomena that support giving choice opportunities to children with disabilities.

Conclusion

In conclusion, the present study indicates that the provision of choice opportunities increases enjoyment in children with disabilities. It demonstrates that slight modifications of the existing RDA program are worthwhile, as they assist in maximising the benefits riders receive from their riding sessions. The project programme was successful in demonstrating a positive effect of the choice condition compared to the no-choice condition. Furthermore, all of the participants improved in their mastery of routines. Participants did not expose themselves to an increased level of risk despite the increase in control they gained while riding. Though inattention and undesirable behaviour did not decrease as expected, further sessions may have provided a clearer data pattern.

Despite the opposing views as to whether children with disabilities should be offered choice, the benefits of allowing choice appear to far outweigh the reasons against. Offering choice is a non-intrusive method of allowing children with disabilities to have control over their own lives. Though it is difficult for some to relinquish this control to these children, it is necessary if children with disabilities are to become active agents, responsible for their actions and participating effectively in society. The goal should not be to become entirely independent, but to have the same level of decisional autonomy as would a non-disabled child.

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APPENDICES

APPENDIX A

Information Sheet to the RDA



Massey University
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RESEARCH PROJECT

“The effects of increasing opportunities for choice-making and independence for children with disabilities when using a riding for disabled program.”

INFORMATION SHEET FOR THE MANAWATU RDA

Dear Manawatu RDA,

My name is Amie Bingham and I am under the supervision of Professor Ian Evans, as part of my Masters in Psychology at Massey University I am conducting a thesis project utilizing the RDA program. The project looks at the benefits of a program that offers the children choice of activities and exercises, and the effect of learning the routines to mount and dismount. The children that consent to participate will be split into two groups, one group will continue with the program as it currently operates, the second group will be offered choice and be taught the routines. Assignment to groups will be random. The children's enjoyment, willingness to make choices, and the mastery of routines will then be assessed. Assessment of enjoyment will involve scoring each time the child smiles or makes positive verbalizations, or positive physical indications, such as clapping. Willingness to make choices will be scored on a yes or no basis as to whether the child indicates a choice of activity. Choice will be assisted with the use of picture boards that represent each activity. Each routine will be split into steps, and mastery will be achieved if the child can complete each one. Riding sessions will be videotaped to assist accurate assessment. At the completion of the project these videos will be returned to the parents of the child concerned. Only Activities approved by you will be used during the project.

Confidentiality of participants, volunteers, and schools is assured. No names will be used during the project. Riding sessions will be videotaped, and the tapes will be given to the participants at the completion of the project, to be used or disposed of at their discretion.

Consent for participation has been given by the riders, their parents, and associated educational groups.

Approval from the Ethics Committee:

This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 04/153. If you have any concerns about the conduct of this project please contact Professor Sylvia V. Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone 06 350 5249, email humanethicspn@massey.ac.nz.



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Supervisor: Professor Ian Evans, School of Psychology, Massey University, Private Bag 11-222, Palmerston North, can be contacted by phoning 3569099 extension 2070.

Yours sincerely,

Amie Bingham
Researcher



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Palmerston North
New Zealand
T 64 6 356 9099 extn 2040
F 64 6 350 5673
www.massey.ac.nz
<http://psychology.massey.ac.nz>

Consent Form
Manawatu RDA

On behalf of the Manawatu RDA approval is **given / not given** for the implementation of Amie Bingham's research project to proceed. The Manawatu RDA understands they can withdraw from the project at any time without consequence.

Signed: _____

Name: _____

Designation: _____

Date: _____

APPENDIX B

Information Sheet to Riders



Massey University
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

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RESEARCH PROJECT

"The effects of increasing opportunities for choice-making and independence for children with disabilities when using a riding for disabled program."

INFORMATION SHEET FOR RIDERS

Dear Rider,

My name is Amie Bingham, I attend Massey University and am conducting a project as part of my thesis. I am being supervised by Professor Ian Evans. My project looks at the effects of allowing riders to make choices when participating in the RDA program, and the effects of teaching riders the routines to mount and dismount. Riders will be split into two groups.

There will be random assignment to groups, this means you have equal chance of being in either group. One group will continue with the program as it currently is. The other group will be allowed to choose which activities they do, and learn how to mount and dismount.

If you do not wish to participate in this project that is ok. You will still ride as usual in group one, and there will be no observation of you relating to the project. Each session will be videotaped to help with data collection, at the end of the project, the videotape will be given to you and your family. Confidentiality will be ensured, and no one will discuss you or the project with anyone outside of the RDA session. If you agree to participate, you can withdraw at anytime.

Yours sincerely,

Amie Bingham.
Researcher



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<http://psychology.massey.ac.nz>

CONSENT FORM

Name: _____

Date: _____

I agree to participate in Amie Bingham's Masters project at the RDA. I understand I can withdraw at anytime without consequence. I understand I will be video taped and that this tape will be given to me at the completion of the project. I understand that confidentiality will be guaranteed.

Signed: _____

I do not wish to participate in this project. I understand this will not impact on my RDA experience in any way. I understand that I will continue to ride in the group offering the current program and will not be observed in any way relating to the project.

Signed: _____

APPENDIX C

Information Sheet to Parents



Massey University
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

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www.massey.ac.nz
http://psychology.massey.ac.nz

RESEARCH PROJECT

"The effects of increasing opportunities for choice-making and independence for children with disabilities when using a riding for disabled program."

INFORMATION SHEET FOR PARENTS

Dear Parent,

My name is Amie Bingham and I am under the supervision of Professor Ian Evans, as part of my Masters in Psychology at Massey University I am conducting a thesis project utilizing the RDA program. The project looks at the benefits of a program that offers the children choice of activities and exercises, and the affect of learning the routines to mount and dismount. The children that consent to participate will be split into two groups, one group will continue with the program as it currently operates, the second group will be offered choice and be taught the routines. Assignment to groups will be random. The children's enjoyment, willingness to make choices, and mastery of routines will then be assessed. **Assessment of enjoyment will involve scoring each time the child smiles or makes positive verbalizations, or positive physical indications, such as clapping. Willingness to make choices will be scored on a yes or no basis as to whether the child indicates a choice of activity. Choice will be assisted with the use of picture boards that represent each activity. Each routine will be split into steps, and mastery will be achieved if the child can complete each one.** Riding sessions will be videotaped to assist accurate assessment. At the completion of the project these videos will be given to you for use at your discretion.

Your child will be assured confidentiality, and no names will be used in the presentation of the project. If you wish for your child to participate, they are free to withdraw at any time without consequence.

If you wish your child to participate, could you please discuss this project with your child so they understand it to the best of their ability and give their consent if possible. Not wishing to be part of this project will in no way effect your child's participation at the RDA, they can continue to ride in group one, and will not be observed in any way relating to the project. Can you please forward you reply to me as soon as possible.

The Manawatu RDA has given their permission for the project to be conducted within their program.

Approval from Ethics Committee:

This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 04/153. If you have any concerns about the conduct of this project, please contact Professor Sylvia V. Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone 06 350 5249, email humanethicspn@massey.ac.nz.

Researcher: Amie Bingham, School of Psychology, Massey University, Private Bag 11-222, Palmerston North, can be contacted by phoning [REDACTED]



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<http://psychology.massey.ac.nz>

Supervisor: Professor Ian Evans, School of Psychology, Massey University, Private Bag 11-222, Palmerston North, can be contacted by phoning 3569099 extension 2070.

Yours sincerely,

Amie Bingham
Researcher



Massey University
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CONSENT FORM FOR PARENTS

Name: _____

Child's name: _____

Date: _____

I **agree** for my child to participate in Amie Bingham's Masters project at the RDA. I understand my child can withdraw at anytime without consequence. I have discussed this project with my child and obtained their assent. I understand that my child will be video taped and that this tape will be given to me at the completion of the project. I understand that confidentiality will be guaranteed.

Signed: _____

I **do not** wish for my child to participate in this project. I understand this will not impact on their RDA experience in any way. I understand that they will continue to ride in the group offering the current program and will not be observed in any way relating to the project.

Signed: _____

APPENDIX D

Information Sheet to Schools



Massey University
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RESEARCH PROJECT

“The effects of increasing opportunities for choice-making and independence for children with disabilities when using a riding for disabled program.”

LETTER TO SCHOOLS

Dear School,

My name is Amie Bingham and I am under the supervision of Professor Ian Evans, as part of my Masters in Psychology at Massey University I am conducting a thesis project utilizing the RDA program. The project looks at the benefits of a program that offers the children choice of activities and exercises, and the effect of learning the routines to mount and dismount. The children that consent to participate will be split into two groups, one group will continue with the program as it currently operates, the second group will be offered choice and be taught the routines. Assignment to groups will be random. The children's enjoyment, willingness to make choices, and the mastery of routines will then be assessed. Assessment of enjoyment will involve scoring each time the child smiles or makes positive verbalizations, or positive physical indications, such as clapping. Willingness to make choices will be scored on a yes or no basis as to whether the child indicates a choice of activity. Choice will be assisted with the use of picture boards that represent each activity. Each routine will be split into steps, and mastery will be achieved if the child can complete each one. Riding sessions will be videotaped to assist accurate assessment. At the completion of the project these videos will be returned to the parents of the child concerned.

As the children are participating in the RDA program during school time your consent is needed. The project will in no way interfere with the time frame that currently operates. Those that do not consent to participate will in no way be disadvantaged, they will continue to ride in group one and will not be observed in any way relating to the project. Your organization will not be identified in any way in the project. A letter has been sent to parents of the children involved to gain their permission. You can be assured that confidentiality will be maintained and no names will be used during my project. The Manawatu RDA has given permission for the project to be conducted.

Approval from the Ethics Committee:

This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 04/153. If you have any concerns about the conduct of this project please contact Professor Sylvia V. Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone 06 350 5249, email humanethicspn@massey.ac.nz.



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www.massey.ac.nz
<http://psychology.massey.ac.nz>

Researcher: Amie Bingham, School of Psychology, Massey University, Private Bag 11-222, Palmerston North, can be contacted by phoning [REDACTED]

Supervisor: Professor Ian Evans, School of Psychology, Massey University, Private Bag 11-222, Palmerston North, can be contacted by phoning 3569099 extension 2070.

Yours sincerely,

Amie Bingham
Researcher



Massey University
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<http://psychology.massey.ac.nz>

Consent Form
School

Name of School: _____

On behalf of the School named above approval is **given / not given** for the children associated with our school to participate in your project.

Signed: _____

Name: _____

Designation: _____

Date: _____

APPENDIX E

Information Sheet to Volunteers



Massey University
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

SCHOOL OF PSYCHOLOGY
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RESEARCH PROJECT

"The effects of increasing opportunities for choice-making and independence for children with disabilities when using a riding for disabled program."

**INFORMATION SHEET FOR MANAWATU RIDING FOR THE DISABLED
VOLUNTEER**

Dear Manawatu Riding for the Disabled - Volunteer,

My name is Amie Bingham and I am under the supervision of Professor Ian Evans, as part of my Masters in Psychology at Massey University I am conducting a thesis project utilizing the RDA program. The project looks at the benefits of offering a program that offers the children choice of activities and exercises, and the effect of learning the routines to mount and dismount. The children that consent to participate will be split into two groups, one group will continue with the program as it currently operates, the second group will be offered choice and be taught the routines. Assignment to groups will be random. The children's enjoyment, willingness to make choices, and mastery of routines will then be assessed.

As a current volunteer at the RDA, if you agree to participate you will be allocated to one of the two groups. You will not be required to take on extra responsibility relating to the project. Your role will remain as usual; preparing the horses, leading, and side-walking. The first group will operate as usual, the second group will assist in teaching the children routines and offering choice. Not wishing to take part in this project will in no way effect your participation as a volunteer, you may continue to assist with group one and will not be connected to the project. If you do agree to participate, you are free to withdraw at any time without consequence. All participation is confidential and no individuals will be identified in my data.

The Manawatu RDA has granted their permission for the project to take place within their program.

Approval from Ethics Committee:

This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 04/153. If you have any concerns about the conduct of this project, please contact Professor Sylvia V. Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone 06 350 5249, email humanethicspn@massey.ac.nz.

Researcher: Amie Bingham, School of Psychology, Massey University, Private Bag 11-222, Palmerston North, can be contacted by phoning [REDACTED]

Supervisor: Professor Ian Evans, School of Psychology, Massey University, Private Bag 11-222, Palmerston North, can be contacted by phoning 356 9099 extension 2070.

Yours sincerely,

Amie Bingham



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CONSENT FORM

MANAWATU RDA VOLUNTEER

I ~~do~~ ~~not~~ wish to participate in the project.

I understand that the project is confidential, and that I will not be identified in any data.

I also understand that I can withdraw at any time.

Signed: _____

Name: _____

Date: _____

APPENDIX F

Routine Record

Rider _____

Date								
<u>Step</u>								
Return helmet to table	18	18	18	18	18	18	18	18
Unbuckle helmet and remove	17	17	17	17	17	17	17	17
Thank helper and horse	16	16	16	16	16	16	16	16
Run up stirrups	15	15	15	15	15	15	15	15
Leg over and slide off	14	14	14	14	14	14	14	14
Take feet out of stirrups	13	13	13	13	13	13	13	13
Ride end of the arena	12	12	12	12	12	12	12	12
Check position in saddle	11	11	11	11	11	11	11	11
Pick up reins	10	10	10	10	10	10	10	10
Sit still in saddle	9	9	9	9	9	9	9	9
Foot in stirrup and swing leg over	8	8	8	8	8	8	8	8
Check position of mounting block	7	7	7	7	7	7	7	7
Check girth	6	6	6	6	6	6	6	6
Let down stirrups	5	5	5	5	5	5	5	5
Identify horse	4	4	4	4	4	4	4	4
Walk to mounting block	3	3	3	3	3	3	3	3
Put on helmet and buckle up	2	2	2	2	2	2	2	2
Walk to table and choose helmet	1	1	1	1	1	1	1	1

O = needed assistance

/ = completed independently

APPENDIX G

Confidentiality Contract for Research Assistants



Massey University
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

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CONFIDENTIALITY CONTRACT RESEARCH ASSISTANT

I have been briefed by the researcher, Amie Bingham, as to the confidentiality requirements required by me as a research assistant. I understand these requirements and agree to abide by them. I agree not to discuss any of the participants with people outside of the RDA environment.

Signed: _____

Name: _____

Date: _____