

# **The therapeutic effects of working with Dartmoor Ponies: a pathfinding project**

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## **Abstract**

The area of Animal Assisted Therapy, and in particular therapy with Equines, was investigated to assess whether this sort of therapy could contribute to Social and Emotional Aspects of Learning (SEAL). It was proposed that quantitative and qualitative measures would suggest an increase in social and emotional functioning following an Equine Facilitated Learning (EFL) intervention. Three 'at-risk' adolescent males were nominated by teaching staff to participate in a quasi-experimental research design, whereby measures were taken but no variables manipulated. Quantitative data provided weak support for the hypothesis although qualitative data suggested an improvement in functioning followed by a decline in two of the participant's behaviour. It was concluded that EFL provided a basis for social and emotional development.

## **Ethical Statement**

The present study complied with the ethical guidelines as stipulated by University of Plymouth's Principles for Research Involving Human Participants. Because the study used participants who were under sixteen years of age, extra measures were put in place to ensure their welfare.

### *Informed Consent*

Participants were presented with an Information sheet describing the study which was written in a way that made it accessible for people of their age and ability. Consent was gained from participants and from their parents/guardians via a consent form. As the intervention was happening regardless of our involvement, participants had verbally agreed to take part in the Pony Sessions prior to our involvement. Participants and their parents/carers consented to the Pony sessions being filmed.

### *Openness and Honesty*

The information sheet outlined the information needed for the participants and their parents/guardians to get a sense of what we were studying without revealing any hypotheses. The participants were briefed about the content of the Pony Sessions by the horse trainer before these began.

### *Right to withdraw*

The participants and their parents/guardians were informed of their right to withdraw via the Information Sheet and Parent/Guardian consent form and this information was also conveyed verbally. The debrief form received by all parties reiterated this message. Members of staff involved from the school and from the Pony charity were also made aware of this so that they could advise parents/guardians and participants accordingly if the need arose.

### *Protection from harm*

Every precaution was taken to ensure protection from physical and psychological harm throughout the study. As the Pony Sessions were due to take place regardless of our involvement, the Pony charity took responsibility for completing a thorough Risk Assessment of the sessions, and briefed staff on aspects of Health and Safety and insurance was obtained.

The researchers and staff from the charity and the school all had CRB clearance. As the participants were under 16, we ensured that when they were completing the measures or being interviewed that they were aware that a member of school staff who they knew and trusted was nearby. Participants were told that they could leave and seek out this staff member, or any other member of staff at any point, if they required additional support. Participants were also told that the questions on the measures were not compulsory and that if any of them caused them upset pastoral services at the school were in place to discuss this with them. Members of staff at the school were informed that there was a possibility they would get approached with regard to this.

### *Debriefing*

Participants were fully debriefed so that they understood the aims of the study, so that they had an opportunity to ask any questions and so that the researchers could ensure they had not been harmed in any way. Parents/guardians were posted a debrief form and invited to leave any feedback and to contact the researchers or

school with any questions or concerns. The school pastoral care team was available to support any of the participants who felt they would benefit from this.

#### *Confidentiality*

The participants and parents/guardians were informed in the Information Sheet and Parent/Carer Consent Form and Debrief that the information gathered from the study would be strictly confidential and only accessed by those involved with the study. Participants were assured that they would not be made identifiable in the write-up and to this end their names have been changed and details about the school / area have been anonymised. Members of staff from the school, the school itself and staff from the Pony charity have also been anonymised or had their names changed.

The information collected was stored securely and not accessed by anyone outside the study. This included video footage which was stored on a computer located in a secure media suite.

On completion of the project all recorded footage (video and audio) will be signed over to the school.

#### *Data Collection*

All the data reported in this study was collected jointly by myself and Katy Hurworth.

#### **Author Note**

I am grateful to Dr. Paul Broks for his patience and guidance and to my co-researcher Katy Hurworth for making the experience a great deal more enjoyable! I was very glad to have you by my side. My thanks go to all the staff at 'the school'; your commitment to your students is admirable and I feel they are in very safe hands. To 'the trainer' and all at DPHT, you do such fantastic work and I have been moved by your genuine passion for what you do so very well. To the participants and their families, thank you for agreeing to take part. To my family, friends and my partner Dave especially, your support has been invaluable. I cannot thank you enough. Finally, to Prayer and Princess Ruby, the loveable rogues, thank you for just being you!

## **Introduction**

### **The Human-Animal Bond**

In Western societies from the moment we are born, nonhuman animals are ever present in all manner of mediums. From receiving your first stuffed toy to the cartoons you watch, the stories which we are read and visits to parks, zoos and farms, encounters with other species are abundant (Serpell, 1999). It has been argued that the human-animal bond is important throughout the entire lifecycle and that animals' influence on wellbeing should not be underestimated (Sable, 1995). Research into the extent of this bond has found that dog owners can feel as emotionally close (and in one third of cases, emotionally closer) to their pet as they do their closest family member (Barker & Barker, 1988), and it has been suggested this "humanisation" also extends to other companion animals (Fawcett & Gullone, 2001). This ancient bond (Fitzgerald, 1986) has led to speculation surrounding its purpose, with Kellert (2002) suggesting that these strong bonds with other species once served an adaptive function in our evolutionary past thus explaining their prevalence today.

### **Animal Assisted Therapy (AAT)**

The move towards regarding animals as creatures who can help the most vulnerable in society has gained momentum over the past few hundred years (Serpell, 2006) but was brought to the attention of a wide audience of psychologists after Boris Levinson, now regarded as "the pioneer in the field of AAT" (Odendaal, 2000, p. 275), presented his accidental findings at the American Psychological Society's Annual Convention in 1961 (Levinson & Mallon, 1997). Levinson described how unintentionally having his dog 'Jingles' present at a psychotherapy session with a distressed young boy had seemed to greatly benefit the boy and put him at ease. Some remained unconvinced by Levinson's suggestions (Levinson & Mallon, 1997); however his presentation and subsequent publication of his work (Levinson, 1962; 1969) opened a debate surrounding the field. A later study which suggested that pet ownership could explain some of the variance in the survival of coronary patients one year after being discharged (Friedmann, Katcher, Lynch & Thomas, 1980) attracted a great deal of attention in the medical field, however despite the perceived physiological benefits of animals becoming well known (Edney, 1995) at the time their more therapeutic and psychological merit received less attention and support (Serpell, 2006).

In recent years, however, more studies have been published in the area of Animal-Assisted Therapy (AAT) (Wood, 2006), an intervention delivered with the aim of meeting certain physical and/or psychological therapeutic goals, where an animal is a fundamental part of the protocol (Delta Society, 2008). People of all ages have been said to benefit from AAT (King, 2007), although a growing literature suggests that the positive effects of AAT can be particularly powerful with younger people (Brooks, 2005). Again, physiological benefits such as pain-relief in children have been reported (Braun, Strangler, Narveson & Pettingell, 2009) but of more interest to the field of psychology are reports which suggest that AAT can help alleviate symptoms of a wide range of psychological problems (Gasalberti, 2006) and also improve upon competencies of children and adolescents which are already present (Fawcett & Gullone, 2001). Children with Autistic Spectrum Disorders (ASD) a developmental disability which affects aspects of communication and social interaction (The National Autistic Society, 2010), have become a frequently investigated population in the

study of the effects of AAT (Pavlidis, 2008); Early research suggested that an intervention with a dog could significantly increase prosocial behaviours whilst decreasing incidences of self-absorption and typically observed behaviours of children with ASD often deemed socially inappropriate (Redefer & Goodman, 1989). Katcher and Wilkins (1998) utilised AAT with a group of children with severe attention deficit/hyperactive disorder (ADHD) and conduct disorders (CD); ADHD refers to a condition characterised by hyperactivity and impulsivity or inattentiveness or a combination of all three (Selikowitz, 2009). They compared the effects of participation in an Outward Bound (OB) program (where children participated in activities such as canoeing and rock climbing) with participation in a Companiable Zoo (CZ) program where children learned animal care skills. Compared to pupils who had completed the OB program, the researchers found that children in the CZ condition experienced less aggressive episodes, benefited from accelerated learning and teachers rated them as having significantly fewer pathological behaviours after the intervention. These effects did not seem to carry over into other contexts, however, such as in the facility where the children lived.

Kruger and Serpell (2006) acknowledge that the field of AAT operates without a unified theoretical underpinning that would explain why the proposed therapeutic value of interaction with animals exists, however after reviewing the literature they suggest the main theories can be grouped into areas of thought; those who emphasise the “Intrinsic attributes of animals as contributors to therapy” (p. 26) and those who view “Animals as instruments of cognitive and behavioural change” (p. 31). The former firstly credits animals with bringing about a reduction in anxiety levels and arousal perhaps explained by the ‘Biophilia hypothesis’ outlined by Wilson (1984), which proposes that it is in our nature to be attracted to and focus on other living species (Kahn, 1997) and that the need to do so is genetically based and may have served an adaptive value in our evolutionary past (Beck & Katcher, 2003). Kruger and Serpell (2006) note that the combination of an intervention that can both relax and engage a client is a fantastic basis for therapeutic change. Secondly it is suggested that animals act as social mediators and can help bring about a positive relationship between the client and therapist more rapidly than would usually be expected (Kruger & Serpell, 2006) perhaps because they help to put the client at ease whilst becoming an “extension of the therapist” (Fine, 2006 p. 173). Thirdly it is said that animals can be seen as attachment figures, with whom an emotional bond is felt, or as transitional objects in whom clients can temporarily find comfort (Kruger, Trachtenberg & Serpell, 2004).

Those who see the benefit of AAT lying in its ability to bring about cognitive and behavioural change firstly look to cognitive and social cognitive theories, which suggest that AAT provides opportunities for “modeling” (Bandura, Ross & Ross, 1961) of appropriate social behaviours and interactions (Fine, 2006). Animals also provide feedback on both positive and negative social behaviour (Kruger & Serpell, 2006) which provides the client with “instant rewards and consequences” (Moreau, 2001 p. 30). AAT is said to allow for the development of self efficacy and self esteem (Kruger et al, 2004) together with a sense of performance accomplishment and personal agency (Kruger & Serpell, 2006). Finally it is suggested that the client’s new role, perhaps as ‘trainer’ to an animal in an AAT setting (Kruger & Serpell, 2006), calls for an adaptation of their behaviour to fit the new expectations that are placed upon them (Newman & Newman, 2008). Kruger and Serpell (2006) criticise the lack

of research into whether changes bought about using the final two theories as a framework can persist outside of the therapeutic context and if so, for how long.

### **Therapy with Equines**

The use of equines in the therapeutic context differs from AAT interventions typically seen with companion animals such as dogs and cats (who are naturally predatory) because as a species equines were typically preyed upon (Selby, 2009), giving them a tendency to flee from fearful situations, something to which many clients can relate (Vidrine, Owen-Smith & Faulkner, 2002). Being herd-oriented equines enjoy being in close proximity to others and enjoy the companionship this brings (Hallberg, 2008) and because of their very nature seek to form a connection with the client, which can prove therapeutic (Worms, 2009). The use of equines in the therapeutic context initially focused on physical healing (Worms, 2009) with the practice of 'Hippotherapy', a "passive riding activity" (Young, 2005 p. 78) which takes advantage of the movements of equines, often to help clients with neuromusculoskeletal dysfunctions (Scott, 2005). Therapeutic riding is often seen as the natural progression on from hippotherapy where by the client takes a more active role in the riding, under instruction from the therapist, with the primary concern usually being to address physical problems (Scott, 2005) whilst providing emotional stimulation almost as a secondary concern (Pavlidis, 2008). A popular client group for therapeutic riding are children with cerebral palsy (Liptak, 2005); however in a pilot study researchers took a sample of physically and psychologically normally functioning children and measured their levels of anger (along with quality of life and perceived self-competence measures) before and after a weeklong therapeutic riding intervention. Although no significant differences were found for the other two measures, levels of anger appeared to be significantly reduced (Kaiser, Spence, Lavergne & Vanden Bosch, 2004). The authors remained speculative as to why this might have occurred but wished to collect objective data to help address the severe lack of empirical research in the field where people have come to rely upon the "known" value of therapeutic riding, without having scientific validation (Kaiser et al, 2004). In marked contrast to this, however, one study actually found elevated levels of aggression after an equine intervention, leading the authors to speculate that perhaps termination issues had caused this increase (Bowers & MacDonald, 2001).

Further AAT interventions involving equines include Equine-facilitated psychotherapy (EFP) and Equine-facilitated learning (EFL), both using equines to treat psychological problems (Klontz, Bivens, Leinart & Klontz, 2007) with either a more therapeutic format led by a qualified therapist (EFP) or in the case of EFL with a more educational format usually led by a therapist, teacher or equine instructor (Scott, 2005). The focus is not on riding, with around 90% of activities being ground based (Rothe, Vega, Torres, Soler & Pazos, 2005) such as grooming and handling tasks (Scott, 2005). EFP/L can utilise the child-equine bond to help progress development in areas such as trust, communication skills, self-control and assertiveness (Rothe et al, 2005) and seems to be a particularly powerful intervention for adolescents (Frewin & Gardiner, 2005). EFP/L has been reported to help adolescents with a vast array of problems such as substance abuse (Dell, Chalmers, Dell, Sauve & MacKinnon, 2008) eating disorders (Cumella & Simpson, 2007) experiencing intra-family violence (Schultz, Remick-Barlow & Robbins, 2007) and aggressive behaviour (Bronkhorst, 2006) amongst others.

Acknowledging that their sample size was small, but wishing to collect some preliminary data on the therapeutic value of EFP/L on attention and self-regulation, Beckman-Devik and Ansin (2008) examined a group made up mostly of children diagnosed with ADHD. Reports from teachers suggested that children who had participated in the EFP/L demonstrated improved social behaviours, better control and attention and a reduction in oppositionality than controls. Parents of these children also reported reduced oppositionality, reductions in anxiety, shyness, hyperactivity and social problems, along with an improvement in regulatory, control and self-monitoring skills, as compared to controls. These findings are particularly promising as they show improvements consistent across two different contexts, home and school, which other researchers have failed to demonstrate (e.g. Katcher & Wilkins, 1998).

In another study, adolescents reported higher levels of self-esteem after participating in a six day residential horsemanship program. (Saunders-Ferguson, Barnett, Culen & TenBroeck, 2008). The authors note that the results cannot be proved to be causal however they do attribute the positive changes to contact with the horses partially due to the extent of contact, which was on average six hours a day. The study however did not use a control group of students who were also participating in a residential program but without the inclusion of horsemanship activities. Including such a group would add strength to the argument that it is the influence of equines that has impacted on self esteem. Bowers and MacDonald (2001) found mixed results across the groups of students participating in their EFP/L programs, with adolescents at one centre reporting improvements in self esteem whilst at other locations, no statistically significant differences were recorded. The researchers investigated EFP/L programs at six different locations, all of which differed on a number of variables such as the duration of each session, the frequency of sessions and the duration of the entire program. This alone could account for the differing results that they found and it would be advantageous to see consistency across the programs being investigated.

Ewing, MacDonald, Taylor and Bowers (2007) investigated a number of measures including empathy and locus of control in a group of adolescents with severe emotional disorders who participated in an EFL intervention. No statistically significant results were found between pre and post intervention scores for any of the measures but the researchers proposed that perhaps the participant's family lives and their apparent difficulty attending to and understanding the questions asked of them in the scales accounted for this. Despite the disappointing quantitative data, qualitative data compiled through observations and interviews seemed to suggest that for many of the children, the intervention had been a positive one which taught them transferable skills including cooperation, trust and responsibility.

### **Statement of Purpose**

Adolescence is acknowledged to be a "period of great change" (Rosenblum & Lewis, 2003 p.269) which is often described as tumultuous (Saunders-Ferguson, 2008) and statistics suggest the prevalence of mental health problems increases from childhood into adolescence (Green, McGinnity, Meltzer, Ford & Goodman, 2005). Adolescents are typically seen as a group which is difficult to reach using more conventional therapy methods (Struas, 1999), therefore a need to be more imaginative with developing interventions is advisable (Saunders-Ferguson et al, 2008). As part of secondary schools' commitment to equipping adolescents with the skills they need to

develop into happy and well rounded adults (Gilbert, 2007) the secondary SEAL (Social and Emotional Aspects of Learning) programme was launched nationally in 2007, with the aim of improving upon skills needed for appropriate self-awareness, social skills, empathy, managing feelings and motivation in school pupils (Haigh, 2007). With these aims in mind, in the summer of 2009 a secondary school in the South West made contact with the Dartmoor Pony Heritage Trust, a charity whose aim is to help preserve the Dartmoor pony breed (DPHT, 2010) and arranged for four adolescent boys to attend a week long EFL intervention, which also acted as a 'work experience' placement for the boys. One aim of this pilot study was to increase the boys' abilities to deal with anger. Empirical data collected was incomplete, however reports from members of staff suggested that a remarkable change was observed in one of the boys in particular, who over the course of the week went from being at risk of exclusion to showing the signs of being able to effectively manage his feelings. On completion of the course a number of participants reported feeling bereft that the experience was over and so it was decided any further interventions would happen over a longer time period to help try to combat this (Horse Trainer, personal communication, January 6, 2010).

The school was keen to enrol more pupils onto an additional EFL program to explore how this could contribute to the SEAL program and help re-engage students with their education. The researchers wished to collect quantitative data, which is seldom reported in the EFP/L research field (Ewing et al, 2007), to investigate the potential of EFL as a therapeutic intervention, and staff at the school highlighted concern about levels of empathy, self-esteem and general well-being in a number of its' "at-risk" students (students currently causing concern with behavioural problems and at risk of underachieving at school, Moore, 2006). Empathy has been defined as "an emotional response that stems from another's emotional state or condition and that is congruent with another's emotional state or situation" (Eisenberg & Strayer, 1987 p.5). The development of empathy is said to serve a protective purpose in the development of externalising problem behaviours in children (Hastings, Zahn-Waxler, Robinson, Usher & Bridges, 2000). Working with equines is said to provide opportunities for developing an empathetic relationship with the horse (Vidrine, 2002), and researchers have suggested that empathy shown towards animals and humans is correlated (Paul, 2000) and that empathy directed at animals can be generalised to human directed empathy (Thompson & Gullone, 2003). Self-esteem has been defined as "a positive or negative view toward a particular object, namely, the self" (Rosenberg, 1966, p.30). It has been suggested that self-esteem can act as a buffer to guard against anxiety (Greenberg et al, 1992). Well-being is an ambiguous term which has caused a lot of debate surrounding how exactly to define it, however having a sense of well-being is said to mean the extent to which people feel their lives are going well (New Economics Foundation, 2009). It is an important issue in childhood and adolescence as it has been claimed a strong sense of well-being can act as a protective influence against delinquent behaviours and can assist young people in performing well academically, which in turn greatly affects aspects of life-long well-being (National Institute for Health and Clinical Excellence, 2009).

The purpose of the current study was to evaluate if EFL is effective in bringing about changes in social and emotional functioning of at-risk adolescents. We assumed improved functioning would be observed in participants new to EFL as measured by various scales and reports from teaching staff. Participants were measured on three occasions to see how any changes manifested longitudinally. We also wished to



investigate how participants viewed their own behaviour whilst engaged in EFL. A further aim was to investigate what the inclusion of a “mentor” who had participated in the pilot study could contribute to the EFL program. Mentors (participants who have demonstrated success in a previous intervention who are invited back to assist) feature very rarely in the literature (e.g. Bowers & MacDonald, 2001; Ewing et al, 2007) so the effect on the mentor in the present study was difficult to predict. Therefore, it was hypothesised that the most likely findings would be an improvement in functioning or results consistent across all the time frames.

## **Method**

### **Participants**

At-risk children from a Mainstream Secondary School in South West England were selected by members of staff together with a horse trainer from the DPHT. Three male students of a Mainstream Secondary School in South West England aged between 12-15 years old were selected.

Aaron is 12 years old with a statement of special educational need due to a diagnosis of moderate learning difficulties and social and emotional behavioural difficulties. Aaron has a diagnosis of ADHD for which he is not currently prescribed any medication. Before the project began, Aaron had been splitting his school week between the Mainstream Secondary School and a Pupil Referral Unit due to his disruptive behaviour shown in class. The transition back to spending his entire week at the Mainstream School coincided with the project. Aaron was recommended to participate due to concerns about his disruptive and inattentive behaviour in school.

Liam is 14 years old and joined the school around one month before the project began. Liam was placed into voluntary foster care and relocated across the county with the hope of distancing him from peers who had been seen as a bad influence. There was concern that Liam had been involved with illegal substances. Liam maintains contact with his Mother but she is unable to look after him on a full time basis. At the start of the project Liam was living with foster carers. Liam was recommended to participate due to appearing withdrawn and depressed at school. Liam has a ‘School Action Plus’ plan, a plan which seeks to involve external support agencies for a child who is not felt to be making sufficient progress after having previously been on a ‘School Action’ plan (Cawse & Lewis, 2006), due to concerns surrounding a moderate learning difficulty and social and emotional behavioural difficulties.

Steve is 15 years old and had previously taken part in the pilot study in the previous academic year. Steve has a ‘School Action’ plan because of concerns surrounding his moderate learning difficulties. Steve was said to have previously had anger management issues, but these were reported as being greatly improved following his earlier work with equines. Steve was invited back to work as a ‘Mentor’ to the other participants, as a way of alleviating the ‘bereft’ feeling Steve was said to have felt after the initial sessions ended.

## **Materials**

### *Rosenberg Self-Esteem Scale (RSES)*

Self-esteem was measured with the Rosenberg Self-Esteem Scale (Rosenberg, 1966), which was designed to measure feelings of self-worth or self-acceptance in adolescents. When originally designed, Rosenberg intended the RSES to be a Guttman scale, however participants are now commonly asked to respond to the items on a four-point Likert-type scale. Participants decide whether they 'Strongly Agree', 'Agree', 'Disagree' or 'Strongly Disagree' with five positively worded (e.g. "I feel I have a number of good qualities") and five negatively worded items (e.g. "I certainly feel useless at times") relating to the self (Robinson, Shaver & Wrightsman, 1992). A Cronbach  $\alpha$  of .88 has been reported by Fleming and Courtney (1984) who suggest that item consistency for the RSES is good.

### *General Well-Being Schedule (GWBS)*

Well-being was measured using General Well-Being Schedule which was written by Dupuy and later published by Fazio (1977). The scale was designed to assess subjective well-being and distress. The first 18 questions from an original draft of 68 were used, which make up what is commonly used as the GWBS (McDowell, 2006). The initial 14 questions give a choice of six response options which either represent intensity (e.g. "How happy, satisfied, or pleased have you been with your personal life?" with 6 choices of response from 'Extremely happy – could not have been more satisfied or pleased' to 'Very dissatisfied') or frequency (e.g. "Have you been waking up fresh and rested?" with 6 choices of response ranging from 'Every day' to 'None of the time'). Questions 15-18 ask participants to rate their response on a 0 to 10 rating scale (e.g. "How relaxed or tense have you been?" with response options ranging from 'Very relaxed' to 'Very tense'). All questions ask that you consider your response based on the past month and half of the questions are positive, half are negative. Cronbach  $\alpha$  scores of .91 and .95 for males and females respectively have been reported (Fazio, 1977) suggesting high internal consistency.

### *Index of Empathy for Children and Adolescents (IECA)*

Empathy was measured using Bryant's (1982) Index of Empathy for Children and Adolescents, a scale adapted from Mehrabian and Epstein's (1972) affective empathy scale to make it suitable for use with adolescents (Lovett & Sheffield, 2007). The IECA consists of 22 statements, each of which is rated on a 9 point Likert-type scale ranging from the respondent reporting that the statement (e.g. "I get upset when I see a girl being hurt") sounds 'Not at all like me' (-4) to 'Very much like me' (+4). Half of the questions are negatively worded, half positively. Bryant (1982) reported a Cronbach  $\alpha$  score of .79 for the oldest participants in her study (12-13 year olds) which suggests sound internal consistency.

### *Perceived functioning in school*

Liaison with school staff highlighted a number of areas which caused concern about the participants in school. Using these concerns the researchers devised "mini scales" personalised to each participant so that they could assess their own perceived functioning in school each week. Each scale had 5 items which contained a statement that required participants to respond using 9 point Likert-type scales. Aaron's scale focused on his inattention and hyperactivity in lessons (e.g. "This week I've..." with a response scale ranging from "Found having to sit still in lessons really boring" to "Found having to sit still in lessons didn't bother me at all"). Liam's scale

focused on his apathetic and socially withdrawn tendencies (e.g. “This week I’ve...” with a response scale ranging from ‘Tried to completely avoid joining in lessons’ to ‘Made a real effort to join in lessons’). Prior to his earlier EFL intervention, Steve was reported as having difficulty controlling his anger. The questions on his scale mostly related to anger management and appropriate control of emotions (e.g. “This week on the whole I have felt...” with a response scale ranging from ‘Very calm and laid back’ to ‘Very wound up’). All participants were asked to consider the preceding 7 days when answering.

#### *Teacher Assessment Form*

Included as qualitative data, the researchers adapted the ‘Teacher Assessment Form’ (BC Children’s Hospital, 2007) for use in the United Kingdom and administered it to a Teaching Assistant who worked closely with Aaron. The form asks for information about the level of academic, social and physical functioning of a child or adolescent in relation to their diagnosis as having ADHD. Some parts of the form require appropriate responses to be selected from multiple choices, however most of the form asks open ended questions for which a free response space is given.

The EFL sessions were recorded using a digital camcorder with a built in microphone so that the researchers could review any sessions as required.

#### **Procedure**

Ethical approval was sought and obtained from the ethical committee for the School of Psychology Department at the University of Plymouth. The current study employed a quasi-experimental design, as the EFL sessions were arranged independently of the researchers with no variables being manipulated. After having been selected to participate by teaching staff and the trainer, informed consent was obtained from participants and their parents/guardians. Participants were briefed and told that the researchers wished to investigate how working with Dartmoor Ponies might affect them. Three scales (GWB, RSES and IECA) were administered to participants before the commencement of the first EFL session. (*N.B. Steve completed his scales one week later than Aaron and Liam due to a delay in receiving informed consent from his parents*). The same scales were administered during the final EFL session and approximately 8 weeks after the final session. Each battery of scales took approximately 20 minutes to complete.

The EFL program consisted of 6 weekly sessions, each lasting approximately ninety minute in duration. Two young Dartmoor ponies were delivered by their owner at the initial session, and had previously received minimal training. Aaron and Liam were taught by the trainer and a team of volunteers how to train and care for the ponies whilst adhering to the course aims to:

- “Develop self confidence and deal with significant changes”
- “Work as individuals and as part of a team”
- “Achieve personal and professional development”
- “Engage in a positive learning experience”
- “Develop practical skills”
- “Develop an appreciation for environment”
- “Develop empathic relationships with the ponies”
- “Develop an awareness of the effects of non verbal communication”

(Excerpt taken from the DPHT Proposal)

Aaron initially worked primarily with the pony Princess (later renamed Princess Ruby), and Liam with the pony Prayer, however, after the participants swapped ponies towards the end of the second session and Liam controlled the behaviour of Princess Ruby very effectively, Liam concentrated primarily on training her whilst Aaron trained Prayer. Steve acted as a mentor, giving demonstrations and offering assistance where it was needed. As the sessions progressed they became more challenging with the ponies being led along a busy road, for example. For the final session, the participants were encouraged to invite any family members to watch them load the ponies into the horsebox to be returned to their owner. Only family members of Aaron attended and witnessed a photograph presentation session in front of school staff, including the head teacher, and volunteers and staff from DPHT.

From sessions 2 – 6 participants completed their individual ‘Perceived functioning in school’ scales on commencement of the session. The Teachers Assessment form was completed shortly after the intervention began, again shortly after the final session and finally eight weeks later. The participants were interviewed individually with a semi-structured interview shortly before the final session commenced and eight weeks after the sessions had finished (Steve was unavailable for the final interview). Members of school staff were interviewed collectively with a semi-structured interview design shortly after the sessions commenced and eight weeks after the sessions had finished. The trainer was also interviewed eight weeks after the sessions had finished. Participants were fully debriefed and thanked for their participation. Debrief information was sent to parents/guardians who were invited to provide any comments about the project.

## Results

Results are reported in two sections. First quantitative data is presented, followed afterward by qualitative data.

### General Well-Being Schedule (GWBS)

It was hypothesised that after taking part in an EFL intervention, well-being, as tested using the GWBS (Fazio, 1977), would be increased for Aaron and Liam and would either increase or remain stable for Steve.

**Table 1** GWBS scores

Participant	Time 1: Before	Time 2: After	Time 3: Follow-up
Aaron	77 <i>Positive Well-Being</i>	N/A Results <i>incomplete</i>	93 <i>Positive Well-Being</i>
Liam	70 <i>Moderate Distress</i>	N/A Results <i>incomplete</i>	51 <i>Severe Distress</i>
Steve	68 <i>Moderate Distress</i>	67 <i>Moderate Distress</i>	N/A Unavailable

*Note. Scores of 0-60 suggest “Severe Distress”, 61-72 “Moderate Distress” and 73-110 “Positive Well-Being”*

Well-Being scores for Aaron increased between time 1 and time 3. Both scores were said to represent “Positive Well-Being” with the score at time 3 being higher which is indicative of greater Well-Being. Aaron did not complete every question on the scale

when it was administered at Time 2, which meant it could not be scored and the results were omitted.

Well-Being scores for Liam decreased between time 1 and time 3. At time 1 Liam's score was said to reflect "Moderate Distress" and his score at time 3 was said to reflect "Severe Distress". Liam also did not complete every question on the scale when it was administered at Time 2, which meant it could not be scored and the results were omitted.

Well-Being scores for Steve decreased very slightly by one mark between time 1 and time 2. Both scores were said to reflect "Moderate Distress".

Aaron's results seem to support the hypothesis whereas Liam's show an opposite effect to what was expected. Steve's score decreased by one mark, which supports the hypothesis that well-being would remain stable over the time frame.

### **Rosenberg Self-Esteem Scale (RSES)**

It was hypothesised that after taking part in an EFL intervention self-esteem, as tested using the RSES (Rosenberg, 1966), would increase for Aaron and Liam and either increase or remain stable for Steve.

**Table 2** RSES scores

Participant	Time 1: Before	Time 2: After	Time 3: Follow-up
Aaron	17/30	24/30	27/30
Liam	18/30	16/30	16.5/30
Steve	18/30	18/30	N/A <i>Unavailable</i>

*Note. Scores can range from 0-30. Higher scores indicate higher levels of self-esteem. Scores between 15 and 25 are said to fall in the normal range with scores below 15 suggesting low self-esteem (W. W. Norton & Co., n.d).*

Self-Esteem seemed to increase for Aaron between times 1 and 2, and then a further increase was recorded at time 3. All results fell within the range of 'normal' self-esteem levels.

A decline in self-esteem was observed for Liam between times 1 and 2, with a partial recovery by time 3. All results fell within the lower end of the normal range..

Steve's self-esteem score remained constant between times 1 and 2 and was at the low end of the normal range. Steve was unavailable for testing at time 3.

Aaron's results seem to support the hypothesis whereas Liam's do not. Steve's score remained constant, supporting the hypothesis that self-esteem would remain stable over the time frame.

### **Index of Empathy for Children and Adolescents (IECA)**

It was hypothesised that taking part in an EFL intervention would increase empathy, as reported using the IECA (Bryant, 1982) for Aaron and Liam and either increase or remain stable for Steve.

**Table 3** IECA scores

Participant	Time 1: Before	Time 2: After	Time 3: Follow-up
Aaron	2.50	2.00	3.14
Liam	0.23	0.86	1.18
Steve	0.05	-0.32	N/A Results incomplete

Note. Scores can range from -4.00 to +4.00 with higher scores indicating greater levels of empathy.

Aaron’s empathy score decreased between time 1 and time 2. However, at time 3 the score exceeded that of time 1, suggesting a rise in empathy after an initial decline.

Scores for Liam increased from time 1 to time 2 and further at time 3.

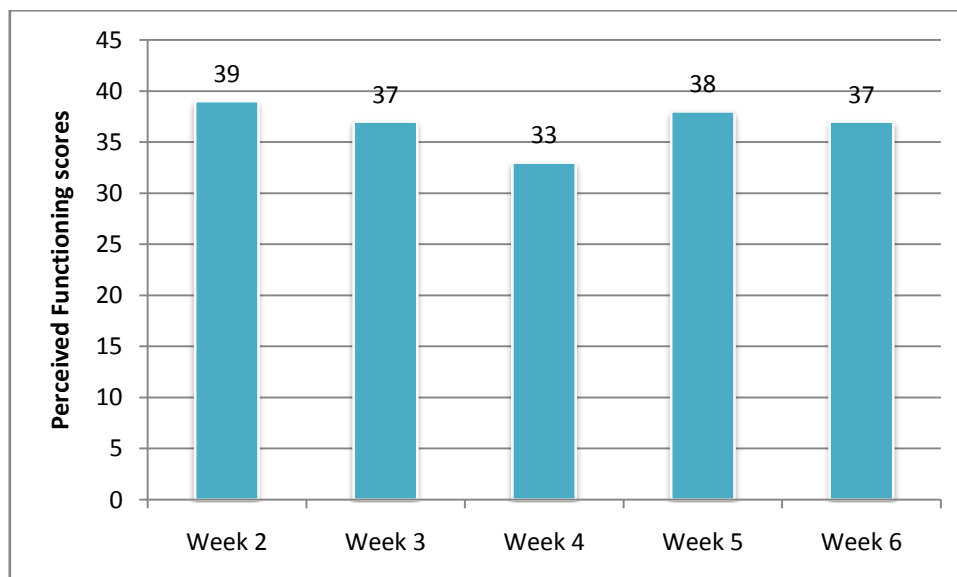
Scores for Steve decreased between time 1 and time 2. Steve was unavailable for testing at time 3.

Aaron’s results seem to offer partial support to the hypothesis. Liam’s scores seem to support the hypothesis. Scores for Steve decreased which did not support either hypothesis.

### Perceived Functioning in School

#### Aaron

Aaron’s perception of how he functioned at school remained fairly consistent apart from a dip when tested at Week 4 (Figure 1). Overall an improvement in how participant A perceived his behaviour was not observed.

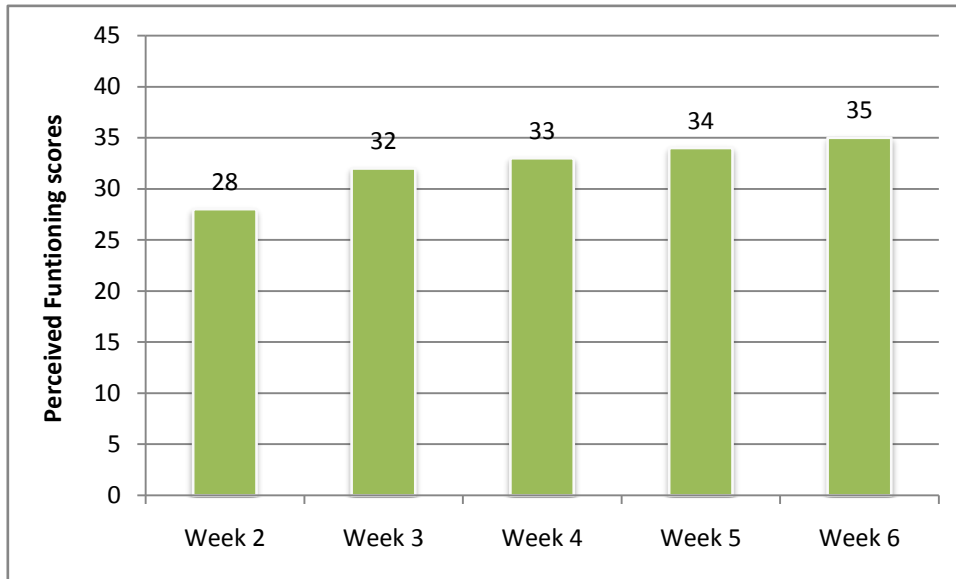


**Figure 1** 'Perceived functioning in school' scores

Scores can range from 0-45 with higher numbers indicating better perceived behaviour.

*Liam*

Liam's perception of his functioning at school initially increased by 4 points between weeks 2 and 3 and then continued to rise by a consistent 1 point each week until the final week of the EFL intervention (Figure 2).

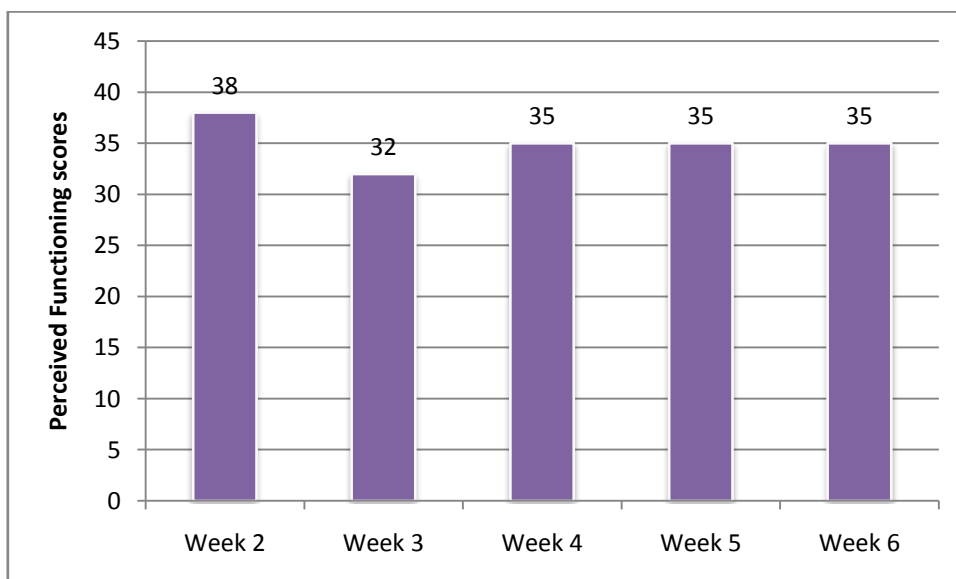


**Figure 2** 'Perceived functioning in school' scores

Scores can range from 0-45 with higher numbers indicating better perceived behaviour.

*Steve*

Steve experienced a drop in his perceived functioning between weeks 2 and 3. This increased in week 4 and remained stable for the final weeks of the EFL intervention



**Figure 3** 'Perceived functioning in school' scores

*Scores can range from 0-45 with higher numbers indicating better perceived behaviour.*

### **Qualitative results**

Case studies were compiled using teacher reports, parental feedback and interviews with the horse trainer, two teachers, a teaching assistant and the participants themselves. Direct quotes were taken from several interviews conducted.

#### *Aaron*

Aaron is 12 years old with a diagnosis of ADHD. Teaching staff reported that Aaron has a “very troubled background” and comes from “a very dysfunctional family”. His parents don’t live together and he has a difficult relationship with his older brother who participated in the pilot study. Aaron has reportedly said that his older brother “gets all the attention” and as a result Aaron “desperately wants his Mum’s attention” and “loves attention”. Aaron reportedly admitted to a member of staff that at home he “shuts himself in the loo, so he can just get away from his brother going on at him”. Teachers have observed Aaron as having “very low self-esteem” and as “a very sad young boy” who “feels he has no control” over his life. It was reported that “he can empathise” but there’s an element of “attachment disorder to think of”.

Prior to the intervention Aaron reportedly performed at a level 1-2 years below the average for his age in reading, writing, spelling and mathematics and performance on classroom assignments and homework and classroom behaviour was reported as below average or poor. This was felt to be due to Aaron “missing school as at PRU (Pupil Referral Unit)”. Classroom participation was seen as average. Although Aaron wasn’t reported as being disruptive all the time, he needed “constant reminder(s) about good behaviour” and would “act the clown” in lessons where he reportedly “sings, calls out silly comments, chants”. Aaron reportedly interacted socially “very well” and was “popular” and “wants to be involved” but that “he has to work at building his friendships because others see him as getting into trouble”. Aaron would “rarely confront staff” and resolve arguments either by “sit(ing) quietly and sulk(ing)” or it was reported that he “runs off in a bad mood” and “he’s not able to recognise or tell somebody I’m feeling this, because of this”. Aaron’s attitude was said to be “apathetic” and he would come into school “in the wrong frame of mind” with “no self belief or family believing in him”. Aaron was said to have a number of strengths; staff commented that he was “likeable, gentle, kind, enthusiastic...funny” and would “bring energy into the room”. One member of staff reported they would “like to see him succeed in school” but acknowledged that “he needs other interests to help him focus” as “he can learn a lot...when he puts his mind to it”.

#### After the EFL intervention

It was reported Aaron was “much calmer, able to control his behaviour” and had “much more respect for everybody”. He was “really trying hard to fit in with everybody” and was “helpful” to a group of children with Special Educational Needs. It was reported that when behaviour began to escalate in a class Aaron “took himself away from that situation and sort of said ‘Oh Miss, is it alright if I come out of that class cos I can feel myself getting wound up?’”. One of the targets on Aaron’s Individual Education Plan (IEP) related to this (‘To ask to leave the class when feeling frustrated and angry or when acting silly’) and it was reported that previously Aaron “probably would have joined in and provoked it (the situation)”. Aaron was reportedly “more responsive, was actually aware more of his feelings, he wouldn’t



respond with anger” and was more “self confident”. Staff believed he viewed the EFL sessions as “something...special for him”. Improvements in his academic abilities, and effort in participating, were both observed prior to the intervention. Aaron went from requiring “constant reminders” about appropriate behaviour to needing “some...a general reminder”. Aaron could still “get drawn in” and “involved with others be(ing) silly”. It was reported that he would now “want to go and find them (friends)” whereas before he wouldn’t seek anyone out. Aaron was said to have improved his “behaviour problems...such as anger, conflict using his physical person”.

#### Follow up

A change was noted in Aaron’s behaviour after the Christmas break which fell at the end of the EFL sessions, and staff noted that “I don’t think he liked Christmas at all”. Returning to a full school timetable after successfully integrating back from the PRU was viewed by staff to be a “bit of a reality check (for Aaron), ‘I’m back here now, I’m staying’”. Aaron was said to be having “a terrible time” with his brother, and it was felt that the two boys probably hadn’t used their shared experience of working with the ponies to find some common ground “It would have to be one of them to start the conversation and I don’t see that they’d ever start the conversation between them”. In class Aaron was reportedly “much more louder, more bubbly...pushing the boundaries now”, “getting himself into trouble” and “even bullying a little bit as well”. Staff say Aaron was “refusing instructions from teachers” but one member of staff reported how she’d “just had a conversation with him...as I would have had with a mature student” and before the intervention she “could never speak to (him)”. It was reported that Aaron’s social worker had “noticed a difference in his behaviour” and that she was “working with Mum on...translating that” and how she was encouraging Aaron’s mum to give him “some more feedback and encouragement on what he was doing”. Although a decline in Aaron’s behaviour was observed after an initial improvement, staff noted that his behaviour was now “probably better than when he was in Year Seven (last year)” and that he was “definitely more in tune with his feelings and knowing how to control himself”. It was felt that Aaron needed “a reflection time” about the project to “remind him and bring him back on course”. Staff described Aaron’s experience of saying ‘good bye’ to the ponies as “almost like a sense of loss” and that it was “really sad to see”.

The experimenters noted how Aaron appeared to find being interviewed difficult. There were long silences whilst Aaron tried to put his thoughts and feelings into words. In the interview just before the final EFL session Aaron reported that he enjoyed “just interacting with them (the ponies)” and that he’d want to work with them again and would consider being a mentor. He described changes in his behaviour since the intervention saying “I’m not getting into trouble, like shouting out in class and like having a go at people and stuff”. He identified Prayer as his favourite pony “because she was just like a little menace” and he enjoyed the fact that “it was like a challenge”. Aaron felt that he’d learnt “how to control...how the ponies are feeling and stuff” but couldn’t articulate what he’d learnt about himself or what he’d learnt which could help him in everyday life. When interviewed eight weeks after the session Aaron described the sessions as “fun” and “relaxing” and if recommending the program to a friend would tell them that “it’s fun and relaxing and you get used to animals and sort of close to them”. Aaron remarked that his “attitude towards...teachers and students” had changed and in contrast to reports from school staff said that his “behaviour’s a lot better” after the Christmas break. Aaron reported missing the ponies and said that he’d still consider being a mentor.

Aaron's parents were invited to provide feedback on the project but declined. The trainer commented that for Aaron "there's everything in Aaron's life that should make him go off the rails" and that her intention was to "catch Aaron at (the age of) 12". She noted how Aaron was shocked when she swore whilst remind the participants about unacceptable behaviour "I could have knocked (him) down with a feather". She also described how Aaron enjoyed and concentrated well on doing some painting during one of the sessions saying "he could've done that all afternoon". She acknowledged that Aaron "needs more assistance" in addition to what he has already received.

Different sources seem to be in agreement that Aaron's social and emotional functioning improved over the course of the EFL which supports the hypothesis. A decline was noted after his return from the Christmas break but not to the level at which he was before the intervention. Aaron acknowledged the positive changes in his behaviour immediately following the intervention, however eight weeks after that he maintained that his behaviour had improved, in contrast to what staff reported.

### *Liam*

Liam is 14 years old and had recently joined the school from elsewhere in the county after being placed in foster care. He was said to have been "running wild" where he used to live, being "a bit of a bully to his Mum" and it was decided to "get him away from the influence of those boys (where he used to live), from the drugs and things". It was reported that Liam "smokes Cannabis" and has a pro-Cannabis attitude, reportedly saying that it "calms you down, makes you more focused, less stressed out". Liam was living with a foster family on commencement of the project, but this broke down the day before the final EFL session and he was placed in a residential unit for most of the Christmas break. By the time of the follow-up interview, Liam had been resettled with another foster family. Liam was reported as having found it "hard to make friends to start with" and was "evading going into lessons a lot of the time" by "saying he felt ill". This was viewed by staff as an "avoidance tactic". Liam was said to struggle with "managing his feelings" and with "social skills" and that motivation was an issue, "He would stumble at the first obstacle, give in". He was described as "a loner" but staff remarked "I'm not sure he's naturally a loner". Staff commented that Liam "likes to appear knowledgeable" especially about drugs but there's concern that the "challenging, street-wise kids like him" due to his "contact with drugs...making him so popular" which is "reinforcing certain bits of inappropriate behaviour". Staff commented that "he was very withdrawn and a held in boy" who could be "quite fragile".

### After the EFL intervention

After the EFL sessions staff reported that Liam was "more confident" and interacting more socially by "sitting more with the class" and that he was establishing "a circle of friends". One teacher commented that "he's really enthusiastic about this pony thing" and that "energetic enthusiasm is quite nice to see in him because I haven't seen that in him before, his eyes lit up". Also adding "he will relate to me now" rather than "sit(ing) down quietly" as he would have before and she can have "a restorative conversation with him which I think he understood". The same member of staff recalled a moment where Liam seemed to control his emotions; "A session with a member of staff was getting very heated and I put my hand out towards him and said 'Remember the horses' and he immediately pulled back". She commented that "He had control, I witnessed him manage his feelings" and that "he's felt a calmness that

he can go back to". Another member of staff said that "he'll empathise more" and was "much more respectful to school rules" regarding uniform etc. and "was more responsive" and "had more pride for his appearance". Liam mentioned to one of the teachers that he "felt safe" and seemed to have realised that "people have invested a lot of time in him" and "that made a big difference to how he saw us really...he did feel part of a community". It was felt that working with the ponies "built his self esteem...hugely" and addressed the "lack of sort of affection" that he was facing. Liam continued to feel that "staff are picking on him" with respect to the suspected drug use and that "staff who are actually quite confrontational with him" can see his anger which "he has got...there to come out".

#### Follow-up

A change was also noted in Liam's behaviour after the Christmas break which staff mainly attributed to "the break over Christmas" rather than to saying 'good bye' to the ponies. One teacher recalled a conversation she'd had recently with his foster parent when she said "I say he can't go (out) and then he just goes". Although one member of staff commented that "I've still got a good relationship with him, he's still very open with me" he reverted back to a behaviour that "he almost got out of" by "making excuses in class saying he's not very well". Staff commented that "he'll try and put on his iPod as much as possible and close off from the lesson" which seems to be "his way of switching off" and that he "just shuts everybody out". Members of staff have been working to address his apathetic "woe is me" attitude and get him to appreciate "just what people were doing for him". It was reported that "Lots of staff are having issues with his uniform" as far as obeying school rules goes. Reports from teaching staff are varied and he seems to "react to personalities very much". One teacher described him as "a very bright boy" and continued to say "He is extremely lost. He just needs to be shown the way back". It was acknowledged by the staff that they'd "got nothing to measure him against because we didn't see him before" due to Liam having been at school elsewhere.

Interviewing Liam just before the final EFL session, he expressed his enjoyment of the project saying "I wouldn't really have the chance to do this like where I used to live, I came round and just got first chance really and like I really appreciate that" and that "it's just a wonderful experience really". All in all he said the sessions were "pretty good" as was working with the trainer because "she gives you like easy tips, like handling really" and the "she's a pretty nice person". He said that he'd "probably" want to work with ponies again and would consider being a mentor. He felt he was "more calmer now than what I used to be like" and had learnt that "it's more easier to do things when you're calm than well stressed really" and "just to like keep breathing, if you're like a little bit tense, just to like relax really". He commented that Ruby was his favourite pony because "she's a little bit more...difficult really" and that "I like to work, not hard, but a little harder" and that he enjoyed the test.

Eight weeks after the sessions ended Liam was interviewed again. He admitted missing the ponies and the sessions and that he'd like to be a mentor at some stage; "I'd quite like to do that. Share my experience really" and would say to a friend considering participating that "it's a really good idea, really". Liam commented that the sessions were "really helpful...just takes your mind off other things that's going on" and that "when I was on the course I felt a lot more happier really...I had something else to like calm down on". He acknowledged that "once I finished I slipped a little bit" (in terms of behaviour). Asked in what way he said that "I have

been like getting in trouble and stuff” but noted that “I haven’t actually had any detentions”. Asked why he thought his behaviour had slipped he said “I’ve just got some things that are going on...it’s just a little bit too much to deal with”.

Liam’s parents and grandparents responded to the opportunity to provide feedback on the project, with his mum saying that Liam “has enjoyed his time with the ponies” and they thought that “he’s learned some responsibility with the ponies”. His Grandparents acknowledged that “We are not sure if (his) problems are better or not because he is with carers” but that “he has told us he looked forward to be(ing) with the ponies and he would like to do something like it again”.

The trainer recalled how she’d had her suspicions that prior to the final session Liam had smoked something and that she had “suspicions that it wasn’t just a fag” suggesting that he’d smoked cannabis. The trainer wrote a letter to Liam just after the Christmas break where she called him a “clever fun loving guy” but warned him that he was “walking a tight rope” with regard to his behaviour. The trainer received a letter from Liam in return (something she had not anticipated) in which he thanked her for the letter and said “it really made me think about my attitude and the way that I was behaving”. He said that “I really loved the pony course and I really got in touch with myself” and “I realise I’ve got to get my act together”. The trainer recalled a time when she’d gone to visit Liam at school after the sessions had finished and how he’d been “f-ing and blinding, really going for it” because of a disagreement with a teacher. She also noted how he’d been surprised that she had come to visit him just to see how he was, rather than to lecture him. She described watching Liam “open up” at school when he attempted to apologise to the teacher but this had been rebuffed. The trainer acknowledged that she’d had to do much more work with Liam.

Liam’s social and emotional functioning seemed to improve well overall, except with members of staff he seemed to clash with. This adds some support to the hypothesis. A decline was noted after the sessions ended and Liam seemed aware of this also.

### *Steve*

Steve is 15 years old and previously participated in the pilot study. Steve was invited back as a mentor for the present study. His home life is described as “very tricky” and there is “quite a volatile situation at home” which he would “bring...into school”. Prior to the pilot study Steve was described as being “angry, confrontational” and had a “lack of communication”. He would “storm out of lessons” get “very emotional and angry, hitting things” and would be “quite deliberately awkward”. Staff reported that “he always looked very miserable”, was “anti-authority” and “was always in trouble”.

After participating in the pilot study he seemed “completely engaged to it” and had developed “a sense of self control”. Steve reportedly told a LEA official that the program “taught me how to manage my feelings, I can manage my feelings when I get angry”. He also was said to have remarked “It’s made me have less of an attitude towards teachers, I understand where teachers are coming from now...and it’s made me feel much happier about myself”. One teacher speculated that before Steve felt “unlistened to”. The school was going to try and arrange anger management sessions for him but that “we don’t think we need to now”. Steve has stayed out of trouble since “he hasn’t raised his head at all” except for “doing some inappropriate IT stuff” once. He has been described of as “such a success story” but that “he was

very sad at the end” (of the pilot project). It was hoped that becoming a mentor would help Steve develop feelings of empathy, “motivation...because you can’t give up when you work with horses”, that he’d “gain more self awareness” and social skills. Staff felt that becoming a mentor would be “really a challenge” because “he’s got to not want to be with them (the other participants) but to lead them”. His Mum had commented to school staff that she felt “really thrilled” that Steve was working with ponies again.

#### After the EFL intervention

Staff commented that during the sessions Steve’s “whole body language changed, he had that sense of importance and recognition about him” and a “sense of responsibility” which hadn’t emerged until he’d become a mentor, resulting in staff saying “I would trust him to do some responsible job”. Staff suggest that he’s developed “empathy as in with his teachers” and has reportedly said “I understand where teachers are coming from”. It was suggested that “it’s made him more tolerant” and “his communication skills have improved”. Also said to have developed further since becoming a mentor is his “self awareness” and his “sense of identity about himself now, sense of being somebody...being significant”. Staff are under the impression that being a mentor “was like consolidating...the good work that was done originally” and “helps your self-esteem as well”. They did acknowledge however that Steve had found it difficult at times learning “to be a mentor and be separate”.

Speaking to Steve just before the final session he said he enjoyed “working with Aaron and Liam” and “basically just getting back out there and doing it again” and he felt the sessions “went alright”. He found working with the trainer a “good experience” because “she’s fun, challenging” and he would like to work with the ponies again. He found being a mentor “a good experience, a lot of fun” and asked if he’d do it again said “why not?” but commented “I preferred being a student...because I was able to get in there and do more things”. He feels that his “attitude’s a bit better” and that over the weeks he’s had the “chance to work with something different, meet new people” and that his new found “patience” can help him in everyday life.

Steve’s parents were invited to provide feedback on the project but declined.

The trainer acknowledged that Steve “found the mentor system very difficult because he couldn’t do the pony bit”. She said she’d had to tell him “if this (your behaviour) continues I can’t have you as a mentor” and that “he realised it’s a tough...role”. She said of Steve that come the final session she “was so proud” of him. She also mentioned how Steve has “talked about wanting to do a Police Dog-Handling course” after finishing school. The trainer acknowledged that Steve “still need(s) more assistance”.

Steve’s behaviour in school seemed to remain consistent across the time frames supporting the consistency hypothesis, however staff acknowledged that Steve had found being a mentor difficult at first but that he seemed to improve.

## **Discussion**

### **Hypotheses**

It was predicted that participation in an EFL intervention would bring improvements in social and emotional functioning, however quantitative data provides weak support for this. Qualitative data, mainly in the form of interviews with teaching staff, described improvements in functioning shortly after the project, but reported a decline in behaviour when followed up 8 weeks later. It was suggested that acting as a mentor would either improve or keep constant measures of social and emotional functioning. Well-being and self-esteem remained fairly constant but a decline in empathy was observed. Perceived school behaviour remained fairly constant and qualitative data suggested that the intervention had had a positive effect on Steve. Unlike the other participants, there wasn't a decline in behaviour weeks after the intervention.

The inconsistencies between the quantitative and qualitative data (especially with regards to Aaron and Liam) could be due to the battery of scales not being appropriate for the participants; each of the participants has learning difficulties and perhaps struggled to read and comprehend the questions, a concern shared by Ewing et al (2007). Aaron's answers appeared to demonstrate a response set bias; for example, he circled the option at the polar ends of the response scale for 21 of 22 questions on the IECA at the second time of testing, and 20 questions at the follow-up. Aaron's ADHD could have made it more difficult for him to attend to the questions (Ewing et al, 2007), or he may have been conforming to demand characteristics by answering in a way which he thought would be pleasing for the researchers, perhaps to increase the chances of him being invited to future pony sessions. If this was the case, Aaron's results would be invalid, further weakening the quantitative data. Considering Liam's turbulent home life during the intervention it is little wonder that his well-being scores decreased. All of the participants experienced difficulties at home which could have acted as extraneous variables (Ewing et al, 2007). The RSES (Rosenberg, 1966) is said to measure global self-esteem (McVey, David, Tweed & Shaw, 2004) and perhaps it is unrealistic to expect a change in this over a short period of time. Rosenberg, Schooler, Schoenbach and Rosenberg (1995) make a distinction between global self-esteem and 'specific self-esteem', which can include areas such as academic self-esteem, particularly relevant to adolescents. The authors suggest that global self-esteem tends to correlate with psychological well-being whereas specific self-esteem is seen as being related to behavioural outcomes. One interpretation of this could be that the participants experienced an improvement in academic self-esteem and this led to the positive school based changes that teaching staff observed. This might not translate to the RSES because an improvement in global self-esteem was hindered by low levels of well-being, possibly caused by their challenging circumstances (Diener, Suh, Lucas & Smith, 1999). Significant increases on scores on the RSES have been observed after participation in a residential horsemanship program (Saunders-Ferguson et al, 2008) which took place over a shorter time frame, although with no indication of the well-being of the study's participants it is difficult to compare the two groups. In contrast to the other participants empathy scores decreased slightly for the mentor, Steve. Close contact with the ponies could have helped Aaron and Liam develop empathy skills transferable to humans (Thompson & Gullone, 2003) whereas as a mentor Steve was far more distant from the ponies, to the extent where he reported not having a

favourite. Teacher's reports nonetheless suggested that Steve had improved his empathy skills regardless of what the IECA suggested. Qualitative data collected suggested a positive effect was experienced.

Relating the intervention to the five main theories of AAT outlined by Kruger (et al, 2006) seems to contribute a greater understanding of the results; firstly the focus of the participants seemed certainly drawn to the ponies, as suggested by the Biophilia hypothesis (Wilson, 1984). Reports suggested that Aaron had trouble focusing his attention in an academic context but was observed showing high levels of concentration and attention when working with the ponies. Secondly, the ponies seemed to act as social mediators (Kruger et al, 2006) assisting the bond between the participants and the trainer with all the participants expressing positive feelings towards the trainer, which were reciprocated ("I see three beautiful boys"). The trainer intentionally described characteristics of the ponies that were in parallel to the participants; she described Prayer to Aaron as "a confident missy, but it's a bit of a facade" and advised "Keep her busy, she's not very good at keeping still". To Liam regarding Princess Ruby "She knows what she's got to do, she just doesn't particularly like doing it". By deflecting attention to the ponies, this allows the participants to relate to and empathise with the ponies without feeling judged or feeling any resentment towards the trainer. This approach is supported by Brooks (2005) who describes the "triangle model" made up of the professional, client and horse (p.204). As far as forming an attachment with the ponies or seeing them as transitional objects (Kruger et al, 2004) Aaron and Liam both seemed to form a strong bond with their preferred ponies, who the trainer said "chose those boys". Aaron was noticeably upset on the day the ponies were taken away; before leading Prayer inside the horsebox he'd asked "Can I go with her?" For Liam the bond was also apparent; early into the intervention he'd tried to take a photo of himself with Princess Ruby on his mobile phone and as the sessions progressed he became more tactile with her. Schultz (1999, as cited in Vidrine et al, 2002) emphasises the importance of touch between the horse-human dyad with Fredrickson-MacNamara and Butler (2006) describing it as "the most intimate act of communication" (p.142). Establishing an attachment with the horse teaches trust (Cumella & Simpson, 2007) and is non-judgemental on the part of the horse (Sovey-Nelson, 2004) who, as the trainer put it, can "see through the clutter...they see the real person" in much the same way an attachment figure might.

Opportunities for "modeling" (Bandura et al, 1961) of appropriate behaviours were frequent with the trainer acknowledging that the project was about "developing ground skills for the pony, which are identical to the life skills that young people need to learn". These included boundaries, respect and trust on which feedback was received both from the trainer and from the ponies (Moreau, 2001). The trainer was passionate about making it clear to the participants when they had tried "If you don't reward the try you've got nothing to work from. Rewarding the try in young people is absolutely everything". Participants could experience a sense of performance accomplishment (Kruger & Serpell, 2006) and pride (Urichuk & Anderson, 2003) that they might not often get to experience due to their academic difficulties. Participants also witnessed the trainer-pony relationship, a loving relationship but one with clearly defined boundaries in place (Fine, 2006). As the trainer explained this is true of both the ponies and the participants "There needs to be a place where you say no more" and the trainer often talked about and defined "unacceptable behaviour" during the sessions. Finally the adoption of a new role for the participant, e.g. 'trainer' or

'mentor' (Kruger & Serpell, 2006) called for the participants to adapt their behaviour (Newman & Newman, 2008). Initially Aaron and Liam seemed to find it very difficult to talk to their ponies and reassure them. For example, in the second session Aaron was prompted several times to reassure his pony after she'd had an unpleasant experience but he seemed unable. Adopting a protective role is unfamiliar for most adolescents. Steve seemed to find it very difficult to adjust to his role initially, with the trainer commenting "Steve was...starting to act like one of the students. His role wasn't a student". After explaining the role of a mentor to Steve he began to embrace this role, though he did say in an interview that he preferred being a 'student'. As Kruger and Serpell (2006) suggested, it is unclear whether this new role complimented by new skills and abilities will be transferred over to other contexts. It seems that initially Aaron and Liam managed to hold on to some of the responsibility and maturity that working with the ponies demands, however this eventually declined and problematic behaviours re-emerged. Steve didn't experience this decline and it was suggested that the summer break that fell between the two projects provided an opportunity for him to "consolidat(e) the good work that was done originally".

### **Wider Implications**

One interesting possible implication arose out of Liam's relationship with cannabis. It was reported that Liam commonly smoked cannabis, something that isn't uncommon in school children today (National Statistics, 2007). A member of staff reported how in a debate about the legalisation of cannabis Liam had argued in favour saying that cannabis "calms you down" and "Everything would be so much nicer if everyone smoked cannabis. Everyone would be calmer". When interviewed just before the final EFL session, Liam acknowledged that he was "calmer now than what I used to be" and interestingly in the follow up interview, Liam said that before Christmas he was "more happier really, cos like I had something else to like, calm down on". If one of the motivations of his cannabis use is to feel a sense of calm, perhaps EFL could provide this. As one of his teachers noted "he's felt a calmness he can go back to". The suggestion is not that EFL could provide all the solutions to adolescents' cannabis use but with research suggesting that the detrimental effects of using cannabis can have negative implications particularly for adolescent mental health and can lead to externalising problems (Monshouwer et al, 2006) the exploration of alternative ways of tackling cannabis use in adolescents should be welcomed. It might be interesting to observe whether a decrease in the consumption of cannabis in participants would be observed during participation in an EFL program.

With evidence suggesting that the younger the EFL participant, the greater the positive outcome and calls for using EFP/L as a preventative measure for children with disruptive and inattentive behaviours (Schultz et al, 2007) it might be useful to consider the use of EFL with children making the transition from primary to secondary school. Joint activities with the school to which the child is transferring to are actively encouraged in advice laid out in the Primary National Strategy compiled by the Department for Education and Skills (2005), which acknowledges that the transition can be difficult for many children, who need support with their social, emotional and behavioural skills and to feel like part of their new community. One of the teachers acknowledged how EFL had helped Liam integrate at his new school "he realised he was valued by us...he did feel part of a community". Bowers and MacDonald's (2001) suggestion that the "critical age" at which EFP/L intervention takes place is 10-13 years old further supports this suggestion.



Although the intervention employed in this study has been described as EFL, it is important to note a number of subtle, yet seemingly significant differences to the usual protocol; firstly Dartmoor ponies were used in the current study and although they are renowned for their kind natures (Elliot-Reep, 2004) they are far removed from the typical horses chosen for EFP/L who are selected on the basis of their “gentle, consistent and trustworthy dispositions” (McCormick & McCormick, 1997, p.43). Domestic horses in EFP/L are typically utilised as ‘mirrors’, reflecting back the client’s behaviour and in doing so helping the client to develop their consciousness (McCormick & McCormick, 1997). In contrast to this, the trainer notes that wild “raw” ponies such as the Dartmoor are more reactionary, “If you’re aggressive...nine times out of ten a wild pony is gonna leave you”. Responding in this way allows clients to see immediately the consequences of their actions and the training of a wild horse also provides a challenge for the participants. Both Aaron and Liam mentioned enjoying the challenging element of the sessions with Aaron saying he preferred Prayer because she was a “menace” and that “it was like a challenge” and Liam saying he preferred Princess Ruby because she was “a little bit more...difficult really” and he added “I like to work, not hard, but a little harder”. Before the intervention both participants weren’t noted for their perseverance with teachers saying of Liam “he would stumble at the first obstacle (and) give in” and of Aaron he “does not like to solve problems”; task impersistence is a common complaint in students with ADHD (Selikowitz, 2009). This unique challenge allows the participants mastery over a very difficult task. The fact that these ponies worked only with the two participants rather than being used by numerous different clients as therapy animals often are (Serpell, Coppinger & Fine, 2006) might have acted to increase the human-horse bond. Liam even chose his pony’s name, deepening the bond further. The ponies themselves also seem to benefit from the intervention, something which Hatch (2007) stresses is an important ethical consideration in AAT: from arriving as untrained wild animals, the ponies leave as a trained useful commodity. As the trainer puts it “that handling has added enormous value to those ponies” and it allows the participants to put “something back into the community”. A further difference is that the trainer’s role in this intervention isn’t as clearly defined as in ordinary EFL interventions. She defines herself as a mentor or a “bossy friend” and has maintained contact with school visits to catch up with the participants and keep updated on their progress. Although the trainer doesn’t classify herself as a therapist and has had no training in this area, she seemed respond to the participants in the ways which are usually thought to bring about therapeutic change (Rogers, 1957).

### **Limitations of the research**

Some limitations were noted with the study including concerns about the conditions in which the participants responded to the measures; on first completing the ‘Perceived functioning in school’ scales the participants were spontaneously helped by volunteers. Being watched as you answer questions can elicit socially desirable responses, where participants tend to rate themselves more favourably (Paulhus, 2002) and scores from Aaron and Steve were highest on this week than at any other point. Due to time constraints and the possibility of separation issues the researchers had to administer the second battery of scales to the participants during their final session which they filled out whilst interacting with the ponies. This seemed to affect concentration levels with two participants missing out an entire page of questions each rendering the tests invalid.

It is unclear whether the particular trainer used in the study acted as a confounding variable; there is a possibility that any changes that were observed in the participants were not a result of working with the equines specifically, but of working with the trainer. Wampold (2001) suggests that the therapeutic alliance can prove more important to the outcome of a therapeutic intervention than the form of the intervention itself. Horses used in EFP/L have been described as “co-therapists” (Rayment, 2004) so it is possible this effect could be extended to them, however it could be argued that this fulfils an intention of EFL, to form a therapeutic bond (Rothe et al, 2005).

It is impossible to know whether any positive changes in Aaron and Liam were due to participation in the project or whether they would have occurred anyway as they settled into school. Finally the participant group was selected by school staff, who were likely to base their decision partially on their predictions of a successful outcome. Therefore they may have been more inclined to focus on evidence consistent with their hypotheses when reporting the changes in participants. One of the teachers interviewed openly admitted to being biased whilst trying to remain objective, however this sort of bias could affect the validity of qualitative data collected. Ideally those rating the outcomes in participants would be blind to whether participants were in an experimental or control condition to allow for more objectivity, however as this would most likely be impractical to teachers in a school setting, researchers could instead observe and code behaviour in a number of different contexts longitudinally.

### **Recommendations and Future Research**

It is recommended that future researchers look to the body of literature surrounding EFP/L when considering future study designs which suggests a number of optimum conditions for therapeutic change; it is suggested that participants are young adolescents (Bowers & MacDonald, 2001) who are motivated to participate (Vidrine et al, 2002) and that there should be as many sessions as possible (Schultz et al, 2007) which could be achieved by inviting successful participants back to act as mentors for future sessions (Bowers & MacDonald, 2001). Although Steve initially struggled with mentorship, once the role had been fully explained to him he seemed to thrive. Mentors would benefit from a refresher / ‘mentor training session’ ahead of the intervention commencing, allowing them “hands on” time with the ponies, which Steve reportedly missed. The trainer acknowledged that having the intensive week of sessions in the pilot study was advantageous in that it allowed for the establishment of bonds more rapidly, “by the end of the first day they know you”. Following this with perhaps six weekly sessions (therefore spanning approximately one school half-term and allowing for consolidation of what participants have learnt) followed by mentorship could alleviate the “feeling of bereavement” experienced when the intense week of the pilot studied ended. Studying the possible effects longitudinally and across a number of contexts would further our knowledge in these areas, which is at present rather weak.

It is acknowledged that the trainer used in the current intervention would not be available to work with every participant, therefore some consistency needs to exist between methods adopted by the trainers (and so they don’t have to rely on the present trainer’s intuition and ability to see “the person within” to assess what work needs to be done). One way of accomplishing this might be to align the delivery of EFP/L sessions with established psychological theory and Fine (2006) suggests that

of Erikson's (1950) Theory of Psychosocial Development; Erikson outlines eight life stages, each of which have a crisis which must be overcome (e.g. Basic trust vs. Basic mistrust) in order to develop healthily. Erikson suggests that stages which are not successfully completed can lead to future problems. Moreau (2001) suggested framing EFL sessions around the first five developmental stages, those most relevant to young people.

Beck and Katcher (2003) call for more comparisons with other therapeutic interventions so a between-subjects design could be adopted in future investigations. The overarching aim for future research should initially be to establish how variables (such as the number /length of sessions, trainer etc.) impact on outcomes and whether these affect alternative client groups differently. Efforts also need to be concentrated on ensuring longevity of any positive outcomes found. The present study describes an exciting adaptation of traditional EFL which could potentially act as a tool for teaching social and emotional aspects of learning for adolescents.

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