Psychological Benefits of Equine-Assisted Activities for Early School Leavers.

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# Table of Contents:

Acknowledgement ................................................................................................................. 2
Abstract .................................................................................................................................. 3

## Chapter 1: Introduction

- Main Concepts under Investigation .................................................................................. 4
- Human-Animal Interaction ................................................................................................. 5
- Early School Leavers .......................................................................................................... 6
- Equine-Assisted Activities (EAA) ........................................................................................ 8
- EAA and Wellbeing ............................................................................................................. 9
- EAA and Assertiveness ....................................................................................................... 11
- EAA and Nonverbal Communication .................................................................................. 12
- EAA and Compassion towards Others ............................................................................. 14
- EAA and Classroom Anxiety ............................................................................................. 16
- The Present Study ................................................................................................................ 17
- Main Hypotheses ................................................................................................................ 19

## Chapter 2: Methodology

- Participants ......................................................................................................................... 20
- Design ................................................................................................................................. 20
- Materials .............................................................................................................................. 21
- Procedure ............................................................................................................................ 23

## Chapter 3: Results

- Descriptive Statistics ......................................................................................................... 27
- Inferential Statistics ............................................................................................................ 32

## Chapter 4: Discussion

- First Hypothesis ................................................................................................................ 37
- Second Hypothesis ............................................................................................................. 38
- Third Hypothesis ................................................................................................................ 39
- Fourth Hypothesis ............................................................................................................. 40
- Fifth Hypothesis ................................................................................................................ 41
- Limitations & Evaluation .................................................................................................. 42
- Possible Applications ......................................................................................................... 44

References ............................................................................................................................. 46

Appendix ................................................................................................................................ 52
Abstract

This study examines the psychological benefits of Equine-Assisted Activities (EAA) for early school leavers. Data was collected from 31 participants in the equine group and 20 participants in the control group over different time points. Data was gathered by means of self-reported questionnaires that assessed wellbeing, assertiveness, classroom anxiety, nonverbal communications, and compassion towards others. The independent samples t-test was conducted at two different time points to assess the difference between the two groups to begin and to assess changes over time. No significant difference was found between the equine and control conditions on levels of wellbeing, assertiveness, classroom anxiety, nonverbal communications, and compassion towards others to begin. The analysis at time point 2 showed a significant difference in the equine groups levels of wellbeing, assertiveness, classroom anxiety, nonverbal communications, and compassion towards others compared to the control. Findings suggest EAA is psychologically beneficial to adolescents.
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Chapter 1: INTRODUCTION

Anecdotal reports and some studies suggest that equine-assisted activities (EAA) may be beneficial to adolescence with challenging behaviour (Holmes et al., 2011). Programmes which use EAA to improve psychological health in people are growing and gaining popularity in many countries across the world. It has been claimed that caring for horses naturally affects the individuals involved in a positive manner, however many of these claims are not supported empirically (Bachi 2012). As a consequence of this further scientific investigation is needed in this area. The purpose of this study is to build on previous research and empirically explore the psychological benefits of equine-assisted activities in early school leavers. Fifty-one adolescents in total participated in this study. Data was collected from two community training centres that work directly with early school leavers. Adolescences in one training centre use equine activities in its programme two days per week, while individuals in the second training centre do not, and will act as a control group. This study builds on previous research by using quantitative measures and also by employing a control group which has been suggested to improve research credentials. Data will be collected over two different time periods from both groups with 6 week intervals. The research studies whether participation in an EAA program positively affects the psychological functioning of early school leavers compared to the control.

Main Concepts under Investigation

The following section will provide an overview of existing literature to define early school leavers, challenging behaviour and equine-assisted activities. Early school leavers have been identified as having a range of challenging behaviours. Emerson et al. (1987) defines challenging behaviour as, ‘behaviour of such intensity,
frequency or duration that the physical safety of the person or others is likely to be placed in serious jeopardy or behaviour which is likely to seriously limit or delay access to, and use of ordinary facilities’. For the purpose of this research project, ‘early school leavers’ are defined as males and females between 16 and 21 years of age. Participants have returned to an alternative form of education which specialises in meeting the ongoing needs of the most disadvantaged, including young people at risk, youths on probation and especially early school leavers. ‘Equine-assisted activities’ include horse riding, stable management, handling, grooming, equine feeding, equine health care and yard routine. This study examines the psychological benefits of EAA on early school leavers well-being, non-verbal communication, classroom anxiety, assertiveness, and compassion towards others. The following sections of this chapter will review the collective literature in support of the psychological benefits of EAA. It will also critically discuss the anecdotal reports of Human-Animal Interactions (HAI) across a variety of populations. In particular it will focus on research conducted on EAA and youths with challenging behaviours, as early school leavers are defined within this category.

**Human-Animal Interactions**

Animals have been referred to as agents of socialization, with the ability to reduce the physiological symptoms of depression and anxiety and to facilitate psychological improvement in oneself (Breget, 2006). During the last decade animal assistance in therapy, education, and care has become widely accepted, and according to Beetz et al. (2012) animals may have a multitude of positive effects on humans. Reports of animals assisting in health care treatments have been claimed since the 1860s (All et al., 1999) and in mental health interventions since the late eighteenth
The effects of HAI are well-documented in humans of different ages, with and without medical and mental health conditions (Levinson, 1978). Psychological benefits of HAI have been found to improve social attention, social behaviour, interpersonal interactions and mood (Beetz et al., 2012). However, scientific investigation regarding its psychological benefits did not begin until 1960s (Serpell 2000). Levinson (1962) was one of the first theorists to address the gap in professional literature regarding how nonhumans can be involved in the therapeutic process. His key concepts discuss the field of animal assisted therapy (AAT) and how a connection to animals positively improves psychological wellbeing in all people. Bachi (2012) supports Levinson’s (1978) view outlining that there is a vast amount of research supporting the psychological benefits of AAT. Similar theorists support claims that AAT has psychological benefits. Kotraschal et al. (2003) found that animal companionships improved children’s social networks, while Grier (1999) found improvements in children’s behaviour. Despite the many reported benefits of HAI/AAT Berget (2006) outlines that many of the suggested psychological and physiological benefits of interacting with animals are still poorly understand and are not supported scientifically. The rationale for this study is to investigate empirically the psychological benefits of animal interactions, focusing particularly on EAA and youths with challenging behaviours.

**Early School Leavers**

The psychological, social, and physical effects of human-animal interactions have been reported to benefit a wide range of individuals including youths with challenging behaviours (Mallon, 1992). Challenging behaviours in adolescence has been associated with socio-economic disadvantage, as has early school leaving (Byrne,
In Ireland it is estimated that approximately 9,000 young people leave school early each year (Byrne et al., 2010). Early school leaving is defined as the ‘non-participation in school before a young person reaches age 16 or before completing three years post-primary education’. As a result youths are often faced with narrower employment opportunities and an increased likelihood of poverty and unemployment (Mallon, 1992). Early school leaving has also been found to increase the likelihood of developing psychological issues such as depression and anxiety (Lally, 2012). Furthermore research suggests that leaving school early increases the risk of taking part in anti-social behaviour, for instance 40% of young offenders have left school before age 14 (Byrne, 2010). Consequently, youths who leave school early have been described as one of the most vulnerable groups in society.

The increased need for successful interventions and the difficulty of working with this population have resulted in the design of many non-traditional approaches to learning for youths with challenging behaviours. In an attempt to encourage young people back into education and training, many alternative programmes are gaining popularity. For instance, a growing number of profession services in Ireland are integrating animal-assisted activities into their programmes, including school completion services, social, youth and mental health workers and probation officers (Lally, 2012). Current research suggests that adolescence our the most likely population to benefit from animal interactions as one in four report experiencing emotional or behavioural problems (Holmes et al., 2011). The present study aims to expand the literature on human-animal interactions by exploring the psychological benefits of EAA in youths who have left school early.
Equine-Assisted Activities

EAA is a form of AAT, which is defined by Smith-Osborne et al., (2010) as an overall term that includes, ‘a range of activities and interactions’ that include horses. EAA development was stimulated by the numerous anecdotal reports of how horses could both physically and psychologically benefit individuals with disabilities, challenging behaviour and mental health problems (Bachi, 2012; Rothe et al. 2005). The horse is a fundamental part of many therapy and educational programmes used by the Equine-Facilitated Mental Health Association (EFHMA) and the Equine-Assisted Growth and Learning Association (EAGALA, 2012). EAGALA (2012) suggests that equine interactions provide greater opportunities for psychological development compared to other forms of AAI. Individuals often found the horse’s size and strength intimidating to begin, learning to overcome this fear creates opportunities for psychological growth which can later be used when dealing with real life situations (EAGALA, 2012).

Smith-Osborne (2010) explains why using horses differs from other animal interventions, ‘horses are not predatory by nature as are dogs and cats, but instead they are prey animals. Therefore, by their nature, they present a unique opportunity in the restorative process which might not otherwise be available. As a prey animal, a horse’s survival depends on their extreme sensitivity to the environment, which encourages youths to focus in on the here and now (Smith-Osborne, 2010; Evan, 1999). EAGALA (2012) describe how horses can engage youths both physically and mentally, ‘as horses require effort, whether in caring for them or working with them, and in an era of immediate gratification and the “easy way” are the norm, horses require people to be engaged in physical and mental work to be successful, a valuable
characteristic in all aspects of life’. Interactions with horses, naturally creates an opportunity for individuals to work through their fears, as a result they create confidence and these skills can be used to deal with intimidating and challenging situations in life (EAGALA, 2012).

However, in spite of the many claimed psychosocial benefits of EAA, a great deal of empirical finding focuses chiefly on its physiological benefits (Vidrine et al, 2002). While there is a limited amount of research regarding the mental, emotional and social components that EAA is claimed to address (Bachi et al., 2012). Yorke et al. (2008) feels that EAA still lacks a firm theoretical and research base. A similar view is taken by Bachi (2012) concluding that a vast amount of psychological benefits of EAA are anecdotal and that there is a need to conduct rigorous research, which examines the human-horse bond empirically and evaluates the effectiveness of EAA. Therefore the rationale of this study is to empirically explore the claimed psychological benefits of equine-assisted activities in individuals who are reported to have challenging behaviours. In support of existing literature regarding the psychological effects of EAA, it is predicted that 1) wellbeing, 2) assertiveness, 3) nonverbal communication 4) compassion for others, will increase and 5) classroom anxiety will decrease in youth’s participation in EAA.

**EAA and Wellbeing**

For many years, researchers have hypothesized about the influence pets may have on their owner’s health, particularly focusing on psychological variables such as well-being, and quality of life (Miller, 2009). Huppert (2009) describes that individual’s with high psychological well-being report better physical health, satisfaction with life,
and function with higher effectiveness. Key elements of psychological well-being are described by Humpert (2012) as the mixture of feeling good and functioning effectively. Psychological well-being is often compromised in a youth’s life when negative emotions are persistent and interfere with an individual’s daily life (Humpert 2009). HAI have been found to improve social attention, social behaviour, interpersonal interactions and well-being (Beetz et al., 2012). Through the years, a growing trend to include pets in hospitals, nursing homes, and other health care facilities to boost the spirits, and thus the physical health, of patients has been to be successful (Wilson, 1991). It is reported by Barker (2005) that companion animals have being found to increase self-esteem, purpose and optimism in members of diverse groups such as children, families, health care patients, senior citizens, and prisoners.

Miller (2009) suggests that oxytocin (OT) may play a key role in the report psychological benefits of HAI. Oxytocin levels have been found to increase after interacting with or petting a dog, suggesting that OT is at least partially responsible for the calm, positive feeling that participants experience during this intervention (Miller, 2009). Similar studies reveal that equine interactions and forming a relationship with a horse can boost oxytocin levels (Dorotik 2012). Oxytocin has several classes of effects on behaviour and social context and has being found to have a major role in social bonding (Liu et al., 2012). Dorotik (2012) describes how higher levels of oxytocin are associated with an improved sense of wellbeing, greater levels of life satisfaction, and more fulfilling relationships. However, according to Humpert (2012) at present there is limited evidence in support of oxytocins role in social bonding, which he describes as an important component of overall well-being.
Research conducted by Burgon (2011) found improvement in the psychological wellbeing of participants who take part in EAA. Burgon reported the experiences of seven young people identified as ‘at-risk’. He outlined that ‘by overcoming fears, then experiencing success and achievement through participating in challenging activities with horses, participants reported psychological benefits such as greater self-confidence, self-esteem and happiness (Burgon, 2011). Limitations of this study included its small sample size and its use of only one group. As a result, generalisations of its findings can not be claimed. Despite these limitations, Holmes (2012) believes equine interactions have the potential to lead to a significant change in youth’s psychological wellbeing.

**EAA and Assertiveness**

Assertiveness is described by Obiageli (2015) as being composed of self-respect, respect for others, and the ability to confidently defend one’s own beliefs, goals and intentions without impingement on the rights of others. Youths often lack the ability to assert themselves in social situations resulting in increasing peer pressure and antisocial behaviour especially throughout adolescence (Lally, 2012). EAA according to EAGALA (2012) provides an opportunity for individuals to personally develop many psychological skills such as assertiveness which can later be transferred to real life situations. In order to build a healthy relationship with a horse the challenge is to assertively establish dominance without the use of aggression (Irwin et al., 2002). A horse is an animal much bigger than a human, with definite ideas of its own. In order to work safely around a horse an individual’s primary goal is to gain its trust and learn to respect its size and strength (Irwin, 2002). Horses are social animals which instinctively live in small, relatively stable family groups or ‘herds’. Horses show
similarities to humans in that they are gregarious by nature and have a great need for social interactions with others (Skipper, 2007).

Horses organise their social lives according to a dominance hierarchy or ‘pecking order’. This is an important aspect of the human-horse relationship as the horse will naturally assess individuals to find out who is most assertive (Skipper, 2007). Therefore, individuals must refuse to be intimated when a horse challenges their leadership and must assert their position as higher in the ‘pecking order’ (Pavord, 1999). According to Irwin (2002) an individual must learn to create a health balance between being too passive or too aggressive in every interaction with a horse. A person who is passive will struggle to be successful in any task involving a horse as the horse will see itself as more dominant. In contrast the person who is overly aggressive will make the horse comply through force and fear (Irwin, 2002).

This critique, unfortunately, implies a simplistic approach to the understanding the significance of being able to assert oneself in every EAA. This study aims to scientifically explore the relationship between EAA and assertiveness. Assertiveness will be measured using the SocioCommunicative Orientation Scale (SCO) (Richmond 2013). SCO is a 20 item measure that refers to an individual’s perception of how assertive and responsive he/she is. This scale was chosen because the alpha reliability estimates for the measure of assertiveness is generally above .80.

**EAA and Nonverbal Communication**

Preja (2013) outlines that all communication is categorised across 3 levels, 1) logical (words) which represents only 7% of all communication, 2) para-verbal (tone,
volume, rate of speech) which represents 38% of communication and finally 3) non-verbal (position, movement, facial expressions, gestures) which represents the highest portion of communication at 55%. This study investigates if EAA will cause an increase in a youth’s ability to communicate nonverbally. It is suggested by Kovaa et al (2006) that nonverbal communication has been found to play a major role in the development of interpersonal communication. Kovaa et al. (2006) examined the effects of HAI in schizophrenic patients, and found significant improvements in their nonverbal communication skills during pre- and post – treatments over a 6 month period. It is suggest that improvements in nonverbal communication would more then likely enhance the patient’s communication, and this positive change could be used in daily social interactions (Kovaa et al., 2006). However, it is imported to note the limitations of this study were reported as its small sample size (n = 5), its lack of a control group, and possibility of observer bias.

In order to successfully interact with a horse, individuals must learn to communicate nonverbally (Pavord, 1999). Trying to communicate with a horse in the same way as a human is ineffective according to Evans (2009). Evans describes how humans are classified as predators, while horses unlike humans are prey animals. Evans suggested that human’s natural approach to working with horses can often be counter-productive. Evans (2009) describes how humans unintentionally adapt predatory behaviour when approaching a horse, unaware that a predator in the wild would approach a horse in the same manner, with intensity and focus. Humans are often not in tune with their own non-verbal communication skills. It is suggested that approaching horses from a predator’s viewpoint can cause distress in unfamiliar horses, trigging its flight or fight response (Evans, 2009). Successful equine interventions are said to occur when an individual is forced to abandon its predator
instincts and behave more like a prey animal. Miller (2009) describes how subtle changes and becoming conscious of one's own body language can make a big difference to successful interactions. For instance, not looking directly at the horse in the eye, approaching it shoulder rather than its face, and walking in a relaxed manner will more than likely produce positive interactions with a horse.

At present there is a lack of scientific research exploring the relationship between EAA and improved nonverbal communication skills in people. However, there is much anecdotal speculation that horses mirror the emotion and physical states of the person during activities and are able to give unbiased and accurate feedback (EAGALA, 2012). It is claimed by mainly organisations that individuals learn new communication skills as they form relationships and bonds with a horse’s (EAGALA, 2012; EFHMA, 2012). This account, regrettably, implies a basic approach to the understanding of how horses increase nonverbal communication skills in humans. Consequently, it suggests that there is a need to conduct research in this area to support or disregard the vast amount of anecdotal reports.

**EAA and Compassion for Others**

Collective literature describes that by developing a bond with an animal, compassion towards other living beings will be encouraged (Thompson et al., 2003). In addition, Thompson et al. (2003) also suggests that empathy that is developed through interactions with non-humans is reported to transfer to humans. According to many animal welfare organisations childhood violence which is directed firstly towards animals is linked to later violence directed towards humans (Thompson et al., 2003). The benefits of animal’s interactions have been found to significantly contribute to the development of empathy in children (Melson, 1998). Humane
education programmes, have been given increasing empirical support regarding the benefits of teaching children to be compassionate toward animals, as a result children are more inclined to act compassionately towards others (Arbour et al., 2009).

According to Davis (1995) the development and ability to have compassion for other living beings is thought to influence children and adolescents prosocial and altruistic behaviour. His findings suggest that a lack of empathy for other living beings resulted in antisocial and aggressive behaviour. In light of this the development of empathy is considered critical in the psychosocial development of children and adolescents. This study builds on previous research by exploring the relationship between animal interactions and compassion towards others in youths with challenging behaviours.

Burgon (2011) outlines how adolescence can develop psychological skills such as compassion through interacting with animals, focusing particularly on horses. The key to successful interactions with horses is, ‘to learn the knack of putting yourself in the horses hooves’ (Pavord, 1999). By doing this a youth therefore learns to understand the emotional state of another being. EAGALA (2012) describes how horses provide vast opportunities for metaphorical learning, which can be a valuable tool to aid education, ‘even with the most challenging individuals or groups’. It is suggested that EAA programmes can be used to create metaphors relating in the youths “real life”. Therefore horses can be used metaphorically to develop vital psychosocial skills such as compassion, emotional regulation and assertiveness (EAGALA, 2012).
**EAA and Anxiety**

HAI has also been found to benefit individuals physiologically, by causing a reduction in stress-related parameters such as cortisol, heart rate and blood pressure (Beetz et al., 2012). Morrison (2007) suggests that animal interactions may be an effective tool used to lower the arousal level of youths with hyperactivity and anxiety disorders. Studies that have focused on the physiological benefits of pet ownership compared to non-pet owners, found lower cardiovascular risk factors and lower blood pressure in individuals who own a pet (Marr et al., 2000). Marr (2000) also found that pet were more independent and positive than non-pet owners. Even brief interactions with unfamiliar pets have been found to reduced anxiety, fear, and depression for certain patient populations (Barker et al., 1998). Brensing et al., (2003) findings imply that adolescence are the most likely group to benefit from AAT, as one in four young youths experience emotional or behavioural problems such as anxiety (Rothe et al., 2005).

Beetz et al. (2012) found that the human-equine interaction may modulate physiological stress parameters through their connection with the oxytocin (OT) system. Odenaal (2000) noted significant increases in OT levels in human plasma levels after as little as three minutes of physically interacting and stroking a dog. This research is relevant to, the EAA programme under study which engages youths in physical interactions with the horse (i.e., grooming, stroking, petting, touching) for the purpose of education. It is therefore, proposed by Beetz (2012) that the interaction between the hypothalamo-pituitary-adrenal axis (HPA) in interaction with the OT system is the central neurobiological mechanism behind the reported benefits of HAI. Beetz (2012) bases this assumption on the crucial and universal physiological
structures and mechanisms that underlie social behaviour in humans as well as animals. Not only this, but also on the fact that human and animals can engage in social relationships with each other, and that the chemical structure of oxytocin is the same in all mammals. Liu et al. (2012) suggests the physiological and psychological effects of OT can also be generalized to humans. For instance, initial research speculates that OT may promote social approach to strangers, by reducing amygdala activation and the stress response associated with social threat.

Holmes et al. (2011) investigated trait anxiety in students aged between 12-14 years taking part in an EAA programme over 3 different time points. His finding revealed that trait anxiety was significantly greater at session 1 compared to session 2 and 3. However, these results must be interpreted with caution as the sample size consisted of 11 participants. As a result, findings cannot be generalised broadly. Similar research conducted by Becks et al. (1996) also found reductions in anxiety, however, Bardill et al. (1997) suggested the findings should be interpreted with carefully as most of the investigations were qualitative in nature and did not use adequate controls. This study takes into account the limitations outlined by previous researchers and uses a control group and a greater sample size (N =51).

The Present Study

The present study will attempt to answer the question of whether or not equine activities are psychologically beneficial to youths with challenging behaviour. The study focuses on early school leavers aged between 16 – 21 years old. This will be done by employing quantitative measures and a control group as a means to compare the effectiveness of EAA among early school leavers. The main aim of the study is to
see if equine group will show greater improvements in well-being, assertiveness, non-verbal communications, compassion, and report lower lowers of classroom anxiety compared to the control. This study builds on previous literature by implementing recommendations made from existing studies. For instance, Holmes (2011) describes how further research exploring EAA should clarify its psychological benefits, employ control methods and use larger scale sample to improve research credentials of equine interaction. Burgon (2011) outlined that further research is needed in order to expand knowledge based on all perceived psychosocial benefits of EAA. Holmes et al. (2012) agrees that further research on EAA is needed, highlighting that if EAA are shown to significantly improve well-being in youths then such programmes are of psychological value.

It is hoped that the results of this research will help highlight the numerous benefits of equine assisted activities particularly for early school leavers and youths with challenging behaviour. It will empirically evaluate claims made by many equestrian centres, including a vast number in Ireland which promotes the use of EAA without much scientific support. EAA could be an important tool used by mental health and professional services that work directly with individual with challenging behaviour. Research carried out within the present study aims to addresses the gap in literature examining the psychological benefits EAA in Ireland.
Main Hypothesis

1) It is hypothesised that a youth’s sense of well-being will be increased after equine-assisted activities compared to the control.

2) Youths taking part in equine-assisted activities will report higher levels of assertiveness compared to the control.

3) It is predicted that decreased levels of classroom anxiety will be reported in youths taking part in EAA compared to the control.

4) Non-verbal communication skills will be increased in youths who participate in equine-assisted activities compared to the control.

5) Increased feelings of compassion towards others are predicted in youths who participated in equine assisted activities compared to the control.
Chapter 2: METHODOLOGY

This section describes the specifics of how this study was conducted. It outlines the sample in detail, and explains the measuring instruments that were selected, including the adaptations that were made to a number of scales. It also describes how the data was gathered and the statistical methods that were used to evaluate the data.

Participants:

The participants chosen for this study were males and females between 16 and 21 years of age who had left school early. This study employs a purposive sample of early school leavers. The overall sample consisted of 51 participants. To select participants the manager of the EAA sample was contacted directly to request formal permission to request data from their learners (N =31). This was due to the centres uniqueness. While a number other centre managers were contacted formally to request permission to collect data, only one centre responded. This centre acted as a control group (N = 20).

Both groups had returned to an alternative form of education to complete FETAC Level 3 and 4 major Awards. The equine group filled out the same survey booklet over two different time points (week 1 and week 6). Within the 6 week interval participants took part in equine-assisted activities 2-3 days per week for up to 4 hours per day. The control group filled out the same survey booklet as the equine group but over two different time points (week 3 and then again 3 weeks later). This was due to unforeseen circumstances within the control centre.

Design:

A repeated measures design (between-groups) will be used for this project. The main independent variable (IV) is the psychological effect of EAA. Five dependent variable
(DV) were measured 1) well-being, 2) assertiveness, 3) non-verbal communication, 4) compassion towards others, and 5) classroom anxiety. The sample consisted of two groups; group 1 was made up of 31 participants of mixed gender who took part in equine interactions (EAA group). Group 2 was made up of 20 participants of mixed gender that had no interactions with horses (control). Individuals were not assigned to particular groups. Group allocating was based on what centre participants were currently attending.

**Materials:**

Well-being was measured using the Flourishing Scale (Diener et al., 2009). The Flourishing Scale is a brief 8-item summary measure of the respondent's self-perceived success in important areas such as relationships, self-esteem, purpose, and optimism. The scale provides a single psychological well-being score. Questions are scored on a seven-point scale ranging from strongly agrees to strongly disagree with scores ranging from 1 to 7. There is no reverse scoring included in this measure. A high score represents a person with many psychological resources and strengths. Cronbach’s coefficient indicates evidence of adequate reliability (a = .86). Diener et al. (2010) noted preliminary evidence that the Flourishing Scale has good psychometric qualities and correlates with other measures in predictable directions.

Assertiveness will be measured using the SocioCommunicative Orientation Scale (SCO) (Richmond 2013). Sociocommunicative is a 20 item measure that refers to an individual's perception of how assertive and responsive he/she is. This SocioCommunicative Orientation Scale (SCO) is designed to measures these orientations. Questions are scored on a five-point scale ranging from strongly agrees to strongly disagree with scores ranging from 1 to 5. The alpha reliability estimates for the measures of assertiveness and responsiveness are generally above .80. The predictive
validity of this instrument has been demonstrated in numerous studies. It is believed
that the components of SCO (assertiveness, responsiveness, and versatility/flexibility)
are the essential cognitive components of general communication competence. To
calculate an assertiveness score, add responses to items 2, 3, 5, 6, 9, 11, 14, 18, and
20.

Nonverbal communication will be measured using the Nonverbal Immediacy
Scale-Self Report (NIS-S) (Richmond et al 2013). The Non-verbal Immediacy Scale-
Self Report (NIS-S) is a 26 item measure and is based on the immediacy of people in
relation to communication. This is the most up-to-date measure of nonverbal
immediacy as a self-report. Questions are scored on a five-point scale ranging from
never to very often with scores ranging from 1 to 5. Alpha reliability estimates around
.90 should be expected. This measure has more face validity than previous
instruments because it has more and more diverse items. Its predictive validity also is
excellent. To compute a total nonverbal immediacy score use the following steps:
Step 1. Add the scores from the following items: 1, 2, 6, 10, 12, 13, 14, 16, 17, 19, 21,
22, and 25. Step 2. Add the scores from the following items: 3, 4, 5, 7, 8, 9, 11, 15,
18, 20, 23, 24, and 26. Total Score = 78 plus Step 1 minus Step 2.

Increased feelings of compassion towards others are predicted in youths who
participated in equine assisted activities. Compassion for others was measured using
the Compassion Scale (Pommier, 2011). This is a 24 item measure which measures an
individual’s ability to understand the emotional state of another person or oneself.
Questions are scored on a five-point scale ranging from almost never to almost always
with scores ranging from 1 to 5. The internal reliability of this scale using Cronbach’s
alpha, is 0.90. To compute a total Compassion Score, take the mean of each subscale (after reverse-scoring) and compute a total mean Kindness Items: 6, 8, 16, & 24, Indifference Items: 2, 12, 14, & 18 (Reversed Scored) Common Humanity: 11, 15, 17, & 20, Separation: 3, 5, 10, & 22 (Reversed Scored), Mindfulness: 4, 9, 13, & 21 Disengagement: 1, 7, 19, & 23 (Reverse Scored). To reverse-score, change the following values: $1 = 5$, $2 = 4$, $3 = 3$, $4 = 2$, $5 = 1$.

Classroom anxiety will be measured using the Classroom Anxiety Scale (Richmond et al., 2001). This instrument contains 20 items that can be used to measure a student's anxiety in the classroom. The Classroom Anxiety Measure (CAM) is based on Richmond's Situational Communication Apprehension Measure developed by McCroskey and Richmond (1982) to measure state communication apprehension in any context. Questions are scored on a five-point scale ranging from strongly disagrees to strongly agree with scores ranging from 1 to 5. Alpha reliability on this measure is estimated to be about .90. To compute your scores, add your scores for each item as indicated below: Recode BOLDED questions with the following format: $1=5$, $2=4$, $3=3$, $4=2$, and $5=1$. After recoding add all of the numbers together to get your composite Classroom Anxiety score. Score should be between 20 and 100. Scores of 80 and above indicate high classroom anxiety; Scores of 25 and below indicate low test or evaluation apprehension; Scores between 26 and 79 indicate moderate test or evaluation apprehension.

Procedure:

Prior to embarking on this study, ethical clearance to carry out the study was obtained from the Ethics Committee within the Department of Psychology at Dublin
Business School (DBS). The research will be conducted through the use of questionnaires to collect quantitative data in order to measure and statistically analyse what has been hypothesised in this research project. The decision to use the selected questionnaires was based on following significant factors, 1) measures have been found to have high reliability and validity, 2) suitability for participates with literacy needs (a small number of adaptation were made in brackets beside certain words to improve clarity and to encourage participates to continue filling out entire booklet) 3) questionnaires content was appropriate to use under Children First guidelines (2011) (all five measures were shown and discussed with a certified child protection officer prior to participates taking part in the study)

To conduct this repeated measures study, a self-report questionnaire booklet was formulated (Appendix 1), which included questions designed to elicit relevant demographic information followed by psychological measures of well-being, assertiveness, non-verbal communications, compassion towards others and classroom anxiety. The survey booklet measured six pages in length including a cover letter informing the participant of the nature of the study, assuring their anonymity and right to withdraw from the study at any time and tutor instructions to read to all participants prior to completing the booklet.

Statutory Declaration (Appendix 2) was obtained in order to access data from participants less than 18 years. Information sheets and consent forms (Appendix 3) were designed for all participants and guardians of learners under 18 years. The information sheet contained general details regarding the purpose of the study. However, care was taken not to include any specifics as this might bias responses.
Information sheets and consent forms were given to each of the centres managers prior to survey booklets being handed out. Due to the literacy needs commonly found in the sample group it was requested that the information sheet be read to all learners prior to signing the consent form. Consent forms included permission to collect data over two different time points. Each centre manager agreed to this request. Once all consent forms had being returned and collect, a date was formally arranged to collect data (time point 1) from each centre.

As previously stated, due to the literacy needs often found within this sample some adaptations were made to measures 3, 4 and 5. Simpler definitions were added in brackets beside certain words in measures 3, 4, & 5 (see Appendix 1 for further information). This was done to encourage participants to complete all measures as it was felt that certain participants might not ask the meaning of a certain word if unclear. A child protection officer was also asked to look through all measures to check their suitability for this sample prior to being handed out. Once these checks were made both the centre managers were emailed the survey booklet to approve its content. The survey booklet also included instructor and learner guidelines, and support information for participants to keep. Once survey booklets were approved by both managers a time as arranged for them to be delivered. Surveys were collected after 1 week in the treatment group and after 4 weeks in the control group. Delays in completing were due to absenteeism, unavailability of literacy supports and scheduling time for individuals to be taken in smaller groups.

Both groups filled out an identical survey booklet over two different time points. The equine group had a difference of 6 weeks from time point 1 – time 2. While due
to unforeseen circumstances within the control centre booklets were not completed till week 4. The second time point for the control group was taken at week 7, giving a 3 week difference from time point 1 – time point 2. Prior to collecting data at the second time point (6 week in equine and week 7 in control) both centre managers were contacted formally to arrange a time that suited. Identical survey booklets were delivered to each of the centres managers.
Chapter 3: RESULTS

All data collected from participants was entered manually into IBM SPSS Statistics 22. Normality was tested using Shapiro-Wilk and on inspection revealed some data was non-normally distributed. However, parametric tests were used to analyze data as they are reported to be robust enough to deal with non-normal distribution and the sample size was considered sufficient (n = 51). The Cronbach’s alpha coefficient for each scale used in the current study was greater than .8 as indicated in Table 1. Correspondingly all five scales utilized were considered reliable within the current sample.

Table 1. Cronbach’s alpha coefficient of 5 questionnaire scales in the current sample.

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>.86</td>
<td>Flourishing Scale</td>
</tr>
<tr>
<td>.80</td>
<td>Socio-Communicative Orientation (SCO)</td>
</tr>
<tr>
<td>.90</td>
<td>Classroom Anxiety</td>
</tr>
<tr>
<td>.90</td>
<td>Nonverbal Immediacy Scale-Self Report (NIS-S)</td>
</tr>
<tr>
<td>.90</td>
<td>Compassion Scale</td>
</tr>
</tbody>
</table>

Descriptive Statistics

Descriptive statistics were carried out to assess the differences between the two groups mean, and standard deviation at the pre and post stage, and also in relation to change scores. For further information see Table 2. and 3. on the next page.

Table 2. Descriptive Statistics of Psychological Measures in Equine Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time Interval</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>Time Interval</td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------</td>
<td>--------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Wellbeing</td>
<td>Pre</td>
<td>42.09</td>
<td>11.19</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>48.12</td>
<td>6.67</td>
</tr>
<tr>
<td></td>
<td>Change</td>
<td>6.03</td>
<td>5.16</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>Pre</td>
<td>31.61</td>
<td>7.74</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>37.41</td>
<td>3.76</td>
</tr>
<tr>
<td></td>
<td>Change</td>
<td>5.80</td>
<td>5.48</td>
</tr>
<tr>
<td>Classroom Anxiety</td>
<td>Pre</td>
<td>53.54</td>
<td>16.71</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>35.54</td>
<td>2.95</td>
</tr>
<tr>
<td></td>
<td>Change</td>
<td>-18.00</td>
<td>15.10</td>
</tr>
<tr>
<td>Nonverbal Communication</td>
<td>Pre</td>
<td>74.90</td>
<td>19.97</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>100.83</td>
<td>5.54</td>
</tr>
<tr>
<td></td>
<td>Change</td>
<td>25.93</td>
<td>17.90</td>
</tr>
<tr>
<td>Compassion Towards Others</td>
<td>Pre</td>
<td>19.25</td>
<td>4.65</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>24.56</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Change</td>
<td>5.30</td>
<td>4.52</td>
</tr>
</tbody>
</table>

Table. 3 Descriptive Statistics of Psychological Measures in Control Group
Table 2. and 3. also show that the mean scores for equine group are lower on levels of wellbeing, and nonverbal communications to begin than the control. Mean scores for assertiveness, classroom anxiety, and compassion towards others are higher for the equine group than the control.

Time point 2 (post)

The mean score for wellbeing is significantly higher in the equine (M = 48.12) than the control (M = 40.40). These statistics are also illustrated in figure 1.

Figure 1. Bar chart illustrating the difference in mean scores at the time point 2.

The mean score for assertiveness is significantly higher in the equine (M = 37.41) than the control (M = 27.80). These statistics are also illustrated in figure 2.
The mean score for classroom anxiety is significantly lower in the equine (M = 35.54) than the control (M = 66.65). These statistics are also illustrated in figure 3.

The mean score for nonverbal communication skills is significantly higher in the equine (M = 100.83) than the control (M = 57.40). These statistics are also illustrated in figure 4.
Figure 4. Bar chart illustrating the difference in mean scores at the time point 2

The mean score for compassion towards others is significantly higher in the equine (M = 24.56) than the control (M = 13.36). These statistics are also illustrated in figure 5.

Figure 5. Bar chart illustrating the difference in mean scores at the time point 2

The mean scores comparisons between both groups at the post stage support hypotheses 1, 2, 3, 4, and 5.
Inferential Statistics

A change score was computed in SPSS by using the following formula post score – pre score on all 5 dependent variables, prior to running an independent samples t-test. An independent samples t-test was then conducted to compare the equine and control group scores on wellbeing, assertiveness, classroom anxiety, nonverbal communication and compassion for others at time point 1 (pre) and time point 2 (change/post). Differences across all five measures will be reported separately.

First Hypothesis

The first hypothesis predicts that equine group will report higher levels of wellbeing after equine interactions compared to the control.

Time point 1

An independent samples t-test found that there was statistically insignificant differences in wellbeing, \( t(49) = -0.35, p = 0.722 \), in equine group (M=42.09, SD = 11.19) compared to the control (M = 43.10, SD = 6.98) at time point 1 (see Table 4.).

Time point 2

An independent samples t-test found that there was statistically significant difference found in scores for wellbeing for equine (M = 6.03, SD = 5.16) compared to the control group (M = -2.70, SD), \( t(48.53) = -7.65, p = .000 \), at time point 2 (see Table 5.). Therefore, the null hypothesis can be rejected. The results suggest that early school leavers in the equine group showed greater improvements in wellbeing compared to the control group.
Second Hypothesis

Youths taking part in equine-assisted activities will report higher levels of assertiveness compared to the control.

*Time point 1*

An independent-samples t-test was conducted to compare assertiveness in equine and control conditions at time point 1. There was no significant difference found between the equine ($M= 31.61, \ SD= 7.74$) and control ($M= 31.25, \ SD=6.64$) conditions at time point 1; $t(49)= 0.172, \ p = .864$. The data are listed in Table 4.

*Time point 2*

Participants in the equine group had significantly higher assertiveness scores ($M = 5.80, \ SD = 5.48$) than the control ($M = -3.45, \ SD = 3.80$) at time point 2, $t(49) = 6.58, \ p = .000$ (see Table 5.) Therefore, the null hypothesis can be rejected. Results indicated that participants in the equine group showed significant improvements in assertiveness following EAA compared to the control.

Third Hypothesis

It is predicted that decreased levels of classroom anxiety with reported in youths taking part in EAA.

*Time point 1*

No significant difference was found in levels of classroom anxiety between the equine ($M = 53.54, \ SD = 16.17$) and control group ($M = 51.95, \ SD = 14.10$) at time point 1, $t(49) = .345, \ p = .725$. The data are listed in Table 4.
Time point 2

A significant decrease in the levels of classroom anxiety was found in the equine group (M = -18.00, SD = 15.10) compared to the control (M = 14.70, SD = 11.26), t(49) = -8.29, p = .000. Therefore, the null hypothesis can be rejected. Results imply that participants who took place in EAA showed reduced levels of classroom anxiety compared to the control. The data are listed in Table 5.

Fourth Hypothesis

It is hypothesised that nonverbal communication skills will be increased in youths who participate in equine-assisted activities.

Time point 1

No significant difference was found in nonverbal communication skills between the equine (M = 74.90, SD = 19.97) and control group (M = 75.65, SD = 10.05) at time point 1, t(49) = -0.15, p = .878. The data are listed in Table 4.

Time point 2

It was found that nonverbal communication skills was significantly higher, t(49) = 9.44, p = .000, in the equine group (M = 25.93, SD = 17.90) compared to the control (M = -18.25, SD = 13.43). Therefore, the null hypothesis can be rejected. Results suggest that early school leavers who took part in EAA showed significant improvements in their nonverbal communication skills compared to the control. The data are listed in Table 5.
**Firth Hypothesis**

Increased feelings of compassion towards others are predicted in youths who participated in equine assisted activities compared to the control.

**Time point 1**

There was not a significant difference in the scores for in the equine (M = 19.25, SD = 4.65) and control (M = 18.93, SD = 3.46) conditions at time point 1; \( t(49) = 0.264, p = .793 \). The data are listed in Table 4.

**Time point 2**

It was found that compassion towards others was significantly higher, \( t(49) = 8.80, p = .000 \), in the equine group (M = 5.30, SD = 4.92) compared to the control (M = -5.57, SD = 3.94). Therefore, the null hypothesis can be rejected. These results suggest that participants who took part in EAA showed greater improvements in compassion towards others compared to the control. The data are listed in Table 5.

**Table 4.** An independent Samples T–test table displaying the differences between the equine and control groups for the various variables at time point 1 (pre).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Groups</th>
<th>Mean</th>
<th>SD</th>
<th>( t )</th>
<th>df</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well-being</td>
<td>Equine</td>
<td>42.09</td>
<td>11.19</td>
<td>-.358</td>
<td>49.00</td>
<td>.722</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>43.10</td>
<td>6.98</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assertiveness</td>
<td>Equine</td>
<td>31.61</td>
<td>7.74</td>
<td>.172</td>
<td>49.00</td>
<td>.864</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>31.25</td>
<td>6.64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom Anxiety</td>
<td>Equine</td>
<td>53.54</td>
<td>16.71</td>
<td>.354</td>
<td>49.00</td>
<td>.725</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>51.95</td>
<td>14.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Verbal Communications</td>
<td>Equine</td>
<td>74.90</td>
<td>19.97</td>
<td>-.155</td>
<td>49.00</td>
<td>.878</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>75.65</td>
<td>10.05</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5. An independent Samples T – test table displaying the differences between the equine and control groups for the various variables change score (post).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Groups</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compassion Towards Others</strong></td>
<td>Equine</td>
<td>19.25</td>
<td>4.65</td>
<td>.264</td>
<td>49.00</td>
<td>.793</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>18.93</td>
<td>3.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Well-being</strong></td>
<td>Equine</td>
<td>6.03</td>
<td>5.16</td>
<td>7.65</td>
<td>48.53</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>-2.70</td>
<td>2.97</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Assertiveness</strong></td>
<td>Equine</td>
<td>5.80</td>
<td>5.48</td>
<td>6.58</td>
<td>49.00</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>-3.45</td>
<td>3.80</td>
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</tr>
<tr>
<td><strong>Classroom Anxiety</strong></td>
<td>Equine</td>
<td>-18.00</td>
<td>15.10</td>
<td>-8.29</td>
<td>49.00</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>14.70</td>
<td>11.26</td>
<td></td>
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<tr>
<td><strong>Non-Verbal Communications</strong></td>
<td>Equine</td>
<td>25.93</td>
<td>17.90</td>
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<td>49.00</td>
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</tr>
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<td></td>
<td>Control</td>
<td>-18.25</td>
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<tr>
<td><strong>Compassion Towards Others</strong></td>
<td>Equine</td>
<td>5.30</td>
<td>4.92</td>
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<td>49.00</td>
<td>.000</td>
</tr>
<tr>
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<td>Control</td>
<td>-5.57</td>
<td>3.94</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Chapter 4: Discussion

The principle aim of this study was to investigate the effect of EAA on psychological factors such as wellbeing, assertiveness, classroom anxiety, nonverbal communication skills, and compassion towards others for early school leavers in Ireland.

First Hypothesis

The first hypothesis predicated that participants who took part in EAA would show a significant difference in wellbeing compared to the control. The results of the independent samples t-test at the pre-test stage concluded that there was an insignificant difference between the equine and control group on levels of wellbeing. This result indicates that there was no significant difference between groups to begin.

Results from an independent samples t-test at time point 2 found a significant improvement in wellbeing scores in the equine compared to the control group. This result supports the hypothesis that early school leavers will psychologically benefit from EAA. A mean score comparison between both groups at time point 2 (refer to Table 2, 3, and figure 1.) confirmed that the equine group showed a significant improvement in wellbeing scores when compared to the control.

This outcome corresponds with other previous studies such as Miller (2009) who found that HAI increased wellbeing and quality of life in youths. Results also support the growing trend to include pets in hospitals, nursing homes, and health care facilities to boost the spirits of patients with physical and psychological ailments.
(Wilson, 1991). It also supports similar studies carried out Beetz et al., (2012) whose findings suggest HAI improves social behaviour, interpersonal skills and wellbeing by boosting oxytocin levels. For instance, horses have been found to be valuable for individuals with Autism and challenging behaviour (Bizub, 2003). Results from the current study support the collective literature that EAA increases wellbeing in adolescence with challenging behaviour.

Second Hypothesis

The second hypothesis stated that youths in the equine group would report higher levels of assertiveness compared to the control. The independent samples t-test was conducted at the pre stage to assess the difference between the two groups. No significant difference was found between the equine and control conditions on levels of assertiveness.

The results from an independent samples t-test at time point 2 found that the equine group showed greater improvements on levels of assertiveness than the control, this result supported the hypothesis. This result supports organisations such as EAGALA (2012) that suggests EAA encourages adolescences to develop social skills and assertiveness. Further support for this hypothesis is confirmed by a mean score comparison between both groups at time point 2 (refer to Table 2, 3, and figure 2.) as the equine group showed a significant improvement in assertiveness scores compared to the control.

This hypothesis was tested to bridge the gap between the vast amounts of anecdotal reports of how EAA improves assertiveness. Even doe results from this
study favour the hypothesis it is important to note that there is a lack of scientific research available.

This study supports the collective literature describing how equine interactions encourage individuals to develop assertiveness. According to Irwin (2002) in order to successfully build a relationship with a horse a person must learn to establish dominance without force. A similar view is taken by Skipper (2007) that horses will naturally assertive themselves in every human-horse interaction to see who is higher in the ‘pecking order’. This approach relates to a theory proposed by Pavord (1999) suggesting that individuals must learn to be assertive as horses will constantly challenge their position of leadership to discover who is superior in the hierarchy.

**Third Hypothesis**

The third hypothesis predicted that the equine group would show lower levels of classroom anxiety than the control. The independent samples t-test was conducted at pre-test stage to assess the difference between the two groups. No significant difference was found between the equine and control conditions on levels of classroom anxiety. Although mean comparisons taken at time point 1 showed that the equine group had higher levels of classroom anxiety than the control (refer to Table 2, and 3.). The results from an independent samples t-test at time point 2 found that the equine group showed a significant decrease in classroom anxiety compared to the control, this result supports the hypothesis.

A mean score comparison between both groups at time point 2 (refer to Table 2, 3, and figure 3.) confirmed that the equine group showed a significant decrease in
classroom anxiety at the post-test stage. This result builds on previous studies that have found animal interactions to cause a reduction in stress, (Beetz et al., 2012) hyperactivity and anxiety disorders in adolescents (Morrison, 2007). According to Beetz et al. (2012) EAA may alter physiological stress parameters through its relationship with the oxytocin system. A mounting body of evidence is in support of this view, as oxytocin levels were found to increase significantly in participants after three minutes of physical interaction and stroking a dog Odenaal (2000). The findings in this study support Beetz (2012) and Odenaal (2000) research. The participants in the equine group took part in physical interactions with horses 2-3 days per week which may have caused an increase in OT levels, resulting in a reduction in classroom anxiety.

Fourth Hypothesis

The fourth hypothesis predicted that nonverbal communication skills would be significantly higher in the equine than the control group. An independent samples t-test was conducted at the pre-test stage to compare differences between the two groups. No significant difference was found in nonverbal communication between the equine and control conditions at time point 1. Results indicate that there was no significant difference to begin with. Results from an independent samples t-test at time point 2 found a significant improvement in nonverbal communication skills in the equine compared with the control group. This outcome supports the hypothesis. In addition, a mean score comparison between both groups at time point 2 (refer to Table 2, 3, and figure 4.) confirmed that the equine group showed a significant improvement in nonverbal communication skills.
This result corresponds with other previous literature such as Pavord (1999) who employed that in order to successfully interact with a horse individuals must learn to communicate nonverbally. In support of this view Evans (2009) describes how humans are not always conscious of their own body language. In contrast horses as prey animals are overly sensitive to nonverbal cues given by humans and non-humans. This result supports the vast amount anecdotal reports found throughout literature that horses have an ability to mirror an individual’s emotional state and can be used to increase nonverbal communication skills (EAGALA, 2012).

**Hypothesis 5**

The firth hypothesis stated that participants in the equine group will show greater improvements on levels of compassion towards others than the control. To assess if there was a significant change over time, both groups were measured at two different time points. An independent samples t-test was conducted at the pre-test stage. No significant difference was found in nonverbal communication between the equine and control conditions at this stage. Results from an independent samples t-test at time point 2 found a significant improvement on levels of compassion in the equine group compared to the control. This result supports the hypothesis. Further support for the hypothesis is confirmed by a mean score comparison between groups at the post-test stage (refer to table 2, 3, and figure 5.).

This result corresponds with previous research which describes how interacting and developing a bond with an animal increase compassion (Thompson et al., 2003). According to Thompson et al. (2003) compassion that is first developed through animal interactions can be transfer to humans. Other studies have seen that teaching youths to be compassionate towards animals, results in higher levels of compassion
been shown towards others (Arbour et al., 2009). Burgon (2011) describes how horses can be used to develop empathy in adolescence, describing that by caring for an animal individuals learn the ability to understand and share the feelings of another living being.

Limitations and Evaluation

There are a number of limitations within the present research that may be responsible for the overall significant results found supporting the psychological benefits of EAA. With regard to the assessment of all five dependent variables, wellbeing, assertiveness, classroom anxiety, nonverbal communication and compassion towards others perhaps other variable factors are at play here. Such as the mean comparisons at time point 1 the equine group reported higher levels of assertiveness, classroom anxiety and compassion towards others than the control. It was also found that the control group had higher levels of wellbeing, and nonverbal communication to begin with.

Another limitation of this study is the possibility that a number of participants in the equine group were already taking part in EAA prior to data collection. The equine group also had a longer period (6 weeks) between time point 1 and 2 than the control (3 weeks). A further weakness of this research is that the equine sample size was larger (n = 31) compared to the control (n = 20). These factors may of being enough to influence the results found in support of the hypothesis.

However, due to the literary needs of participants in both groups the research design could not control for how many youths would take part, and the length of time
it would take each sample to complete the survey booklet. In addition, the research
design could control for participants taking part in EAA prior to data collection or
absenteeism in both samples. A particular strength of this study was the length of the
questionnaire, which resulted in the all of participants completing the full
questionnaire. An additional strength was the results found in support of the
psychological benefits of EAA for early school leaves.

There is an abundance of research that investigates the effect of HAI on
psychological variables such as wellbeing and anxiety. However, there is still a lack
of empirical research relating to how EAA increases wellbeing and decreases anxiety.
OT has been suggested to increase naturally during EAA. Perhaps future research
could investigate the role of the release of oxytoin when participating in EAA. This
would help explain the results found in this study, and clarify how the equine group
showed greater improvements in wellbeing and a reduction in classroom anxiety than
the control.

While the mean scores for equine group were higher on assertiveness and than
scores from the control at time point 1, the difference was not significant. However, a
possible reason for this could be that the equine group were already taking part in
EAA before data was collected. Equine activities have been suggested to develop
interpersonal skills such as assertiveness and nonverbal communication. Future
research could explore specifically what element of EAA causes greater
improvements in assertiveness and nonverbal communication. For instance is there a
specific activity such as handling, grooming, or riding horses that is more
psychologically beneficial. This would help to explain the significant increase in
assertiveness and nonverbal communication skills found in the equine group in this study.

Evaluation of mean scores at time point 1 showed that the equine group had a slightly higher level of compassion towards others than the control. As mentioned previously this could be as a result of taking part in EAA before data was collected. Another possibility could be attributed to the higher number of participants (n = 31) in the equine group compared to the control (n = 20). However there is a vast amount of empirical support relating to how caring and interacting with animal increases empathy in children and adolescences. Possible research could exam if an EAA educational programme in secondary schools or youth reaches causes an improvement in a youth’s level of compassion towards other living beings. This would expand knowledge in this area and support the results found in this study.

Possible Applications

Findings related to an increase in wellbeing and a decrease in classroom anxiety in particular could be useful for health care professional who work directly with children, adolescences, and youths with challenging behaviour. Finding on assertiveness and nonverbal communication skills could be used to encourage youths to take part in EAA to develop important interpersonal skills which in turn can be transferred to real life situations. Findings could influence the possibility of including EAA programmes in primary, secondary, and youth programmes to promote the development of empathy and in children and adolescences.
In conclusion, the main finding of this study demonstrated the psychological benefits of EAA for early school leavers. It is important to acknowledge that the present findings reflect a small sample of participants. A sample greater in number and diversity may yield additional positive results for the EAA within children and adults. The findings of the study with regard to five dependent variables that were measured should encourage future research in this area that employs varied approaches and methods that may help expand our understanding of how EAA is of psychological benefit to individuals.
Reference Section


Appendix 1

A study looking at interventions for early school leavers

Please read the instructions on p. 2 before deciding whether to participate in the research. If you are happy to participate please complete the pages that follow and return the survey to your instructor.
General instructions before starting the survey

You are invited to take part in a research study which will examine the psychological interventions for early school leavers. This is an important study which can help us to learn more about the effects of these programmes. You do not have to participate, but should you be happy to take part this would be very much appreciated. Taking part requires you to answer a survey now and to answer another survey six weeks from now.

If you have any questions at any time while completing the questionnaire, please ask your instructor.

Your anonymity will be protected in this research and your name will not appear in any thesis or publication. Questionnaires will only be identifiable by your date of birth and will not have your name recorded on it.

Remember to write your date of birth in the required space (on the top left hand corner of page 3). Your date of birth is only needed to match your survey that will be collected again in 6 weeks.

This survey will take approximately 20 minutes to complete. Please answer all questions honestly.

If you are unsure of the meaning of any of the words used in the following pages please ask your instructor for help before answering.

You have the right to withdraw from this study at any time.
**Date of birth:** _______________________

**Length of time you have attended the centre:** ________________

**Learner instructions**

Below are 8 statements with which you may agree or disagree. Using the 1–7 scale below, rate how you feeling about each sentence.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Slightly disagree</td>
<td>Neither agree nor disagree</td>
<td>Slightly agree</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

___ I lead a purposeful and meaningful life  
___ My social relationships are supportive and rewarding  
___ I am engaged and interested in my daily activities  
___ I actively contribute to the happiness and well-being of others  
___ I am skilled and capable in the activities that are important to me  
___ I am a good person and live a good life  
___ I am hopeful about my future  
___ People respect me
Learner instructions:
The questionnaire below lists twenty personality characteristics. Please indicate the degree to which you believe each of these characteristics applies to you while interacting with others by rating whether you:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>You strongly disagree that it applies</td>
<td>Disagree that it applies</td>
<td>Are undecided</td>
<td>Agree that it applies</td>
<td>Strongly agree that it applies</td>
</tr>
</tbody>
</table>

There are no right or wrong answers. Work quickly; record your first thought.

_____ 1. helpful (you are ready to lend a hand)
_____ 2. defends own beliefs (you defend ideas that are important to you)
_____ 3. independent (you are happy to work on your own without help from others)
_____ 4. responsive to others (you are quick to respond to others)
_____ 5. forceful (you tend to make a strong impression on people)
_____ 6. has strong personality (you are an outgoing person and are not afraid to express yourself)
_____ 7. sympathetic (you comfort, support and encourage others)
_____ 8. compassionate (you care about others and things)
_____ 9. assertive (self-confident)
_____ 10. sensitive to the needs of others
_____ 11. dominant (controlling)
_____ 12. sincere (honest)
_____ 13. gentle
_____ 14. willing to take a stand
_____ 15. warm
_____ 16. tender (loving)
_____ 17. friendly
_____ 18. acts as a leader
_____ 19. aggressive
_____ 20. competitive (keen to outshine others)
**Learner Instructions:**

This form is composed of statements students have used to describe how they feel in their classroom. After each statement, indicate the number that best describes how you generally feel while attending class. There are no right or wrong answers. Work quickly and rate your first thought. Please indicate the degree to which each statement applies to you by marking whether you:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

_____1. I feel apprehensive (I feel worried).
_____2. I feel disturbed (I feel troubled).
_____3. I am peaceful.
_____4. I feel relaxed.
_____5. I feel uneasy.
_____6. I feel self-assured (I feel sure of myself).
_____7. I feel fearful.
_____8. I feel ruffled (I feel bothered).
_____9. I am jumpy.
_____10. I feel composed (I feel calm).
_____11. I am insecure (I am unsure of myself).
_____12. I feel satisfied (I feel happy).
_____13. I feel safe.
_____14. I feel flustered (I feel nervous or agitated).
_____15. I am cheerful.
_____16. I feel happy.
_____17. I feel dejected (I feel sad).
_____18. I feel pleased.
_____19. I feel good.
_____20. I feel unhappy.
**Learner instructions:**
The following statements describe the ways some people behave while talking with or to others. Please indicate in the space at the left of each item the degree to which you believe the statement applies TO YOU. Please use the following 5-point scale:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally</td>
<td>Often</td>
<td>Very Often</td>
</tr>
</tbody>
</table>

---

1. I use my hands and arms to gesture while talking to people.
2. I touch others on the shoulder or arm while talking to them.
3. I use a monotone or dull voice while talking to people.
4. I look over or away from others while talking to them.
5. I move away from others when they touch me while we are talking.
6. I have a relaxed body position when I talk to people.
7. I frown while talking to people.
8. I avoid eye contact while talking to people.
9. I have a tense body position while talking to people.
10. I sit close or stand close to people while talking with them.
11. My voice is monotonous or dull when I talk to people.
12. I use a variety of vocal (voices) expressions when I talk to people.
13. I gesture when I talk to people.
14. I am animated (lively) when I talk to people.
15. I have a bland (ordinary) facial expression when I talk to people.
16. I move closer to people when I talk to them.
17. I look directly at people while talking to them.
18. I am stiff when I talk to people.
19. I have a lot of vocal variety (higher and lower tones) when I talk to people.
20. I avoid gesturing while I am talking to people.
21. I lean toward people when I talk to them.
22. I maintain eye contact with people when I talk to them.
23. I try not to sit or stand close to people when I talk with them.
24. I lean away from people when I talk to them.
25. I smile when I talk to people.
26. I avoid touching people when I talk to them.
Learner instructions:
Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

<table>
<thead>
<tr>
<th>Almost</th>
<th>Almost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Always</td>
</tr>
</tbody>
</table>

1 2 3 4 5

___1. When people cry in front of me, I often don’t feel anything at all.
___2. Sometimes when people talk about their problems, I feel like I don’t care.
___3. I don’t feel emotionally connected to people in pain.
___4. I pay careful attention when other people talk to me.
___5. I feel detached (removed) from others when they tell me their tales of woe (sadness).
___6. If I see someone going through a difficult time, I try to be caring toward that person.
___7. I often tune out when people tell me about their troubles.
___8. I like to be there for others in times of difficulty.
___9. I notice when people are upset, even if they don’t say anything.
___10. When I see someone feeling down, I feel like I can’t relate to them.
___11. Everyone feels down sometimes, it is part of being human.
___12. Sometimes I am cold to others when they are down and out.
___13. I tend to listen patiently when people tell me their problems.
___14. I don’t concern (worry) myself with other people’s problems.
___15. It’s important to recognize (know) that all people have weaknesses and no one’s perfect.
___16. My heart goes out to people who are unhappy.
___17. Despite my differences with others, I know that everyone feels pain just like me.
___18. When others are feeling troubled, I usually let someone else attend to them.
___19. I don’t think much about the concerns of others.
___20. Suffering is just a part of the common human experience.
___21. When people tell me about their problems, I try to keep a balanced perspective on the situation.
___22. I can’t really connect with other people when they’re suffering.
___23. I try to avoid people who are experiencing a lot of pain.
___24. When others feel sadness, I try to comfort them.
Thank you for taking the time to finish this survey, your insight and experiences are very valuable to this research project. The information you provided will help to explore the potential interventions that may be of benefits to early school leavers. Use the space below if you would like to write about any important experience or intervention that has helped you in the past.

(Optional)

Should you have any further questions or concerns about this survey or any of its questions, please contact Emma Keogh at 01 6260364 or emma@cherryorchard.ie Please return this survey to your instructor. Thank you

* If you have been affected by any of the questions in this survey, please talk to your instructor or refer to the information sheet provided.
Support links

**Jigsaw**
Find Jigsaw projects: headstrong.ie/jigsaw/jigsaw-centres-across-ireland/
Jigsaw is a network of programmes across Ireland designed to make sure
every young person has somewhere to turn to and someone to talk to. There
are Jigsaw projects in 10 communities including Clondalkin, Donegal, Dublin
15, Galway, Kerry, Meath, North Fingal, Offaly, Roscommon and Tallaght.

**ReachOut.com**
ReachOut.com helps young people get through tough times. By providing
quality mental health information and covering issues that can impact our
mental health, ReachOut.com takes the mystery out of mental health.

**SpunOut.ie**
The website, SpunOut.ie, carries a range of health information for young
people, including mental health, sexual health, exam stress and general
lifestyle information. SpunOut also has an extensive online directory allowing
site visitors to search for supports and services in their area.

**National Youth Council of Ireland**
The National Youth Council of Ireland is the representative body for national
voluntary youth work organisations in Ireland.
Dublin Business School

Appendix 2

Dublin Business School / DBS School of Arts
Statutory Declaration

1. Emma Keogh of Hazelwood Bank, Greenpark, Chondalke, Dublin 22

aged 18 years and upwards do solemnly and sincerely, declare that:

1. I have not and have never been engaged in any conduct which could result in a conviction for any offence under the Child Pornography Act 1998. I understand that the offences under the Act comprise child trafficking, the taking of children for the purposes of sexual exploitation, allowing children to be used for the production of child pornography, the dissemination of child pornography, and the possession of child pornography.

2. I have never been convicted of any criminal offence for assault, battery, rape, murder, false imprisonment or unlawful carnal knowledge.

3. I have also never been convicted of any criminal offence relating to the trafficking or possession of drugs for supply.

4. I have never been excluded from working with children.

5. I have read and agree to abide by the code of ethical conduct set out by the Psychological Society of Ireland currently in force at the date of making this Declaration and I agree to abide by this code as subsequently amended from time to time.

6. I have read and agree to abide by the guidelines as set out in the DBS Ethics Policy.

7. I have been informed and understand that if I make a false declaration regarding any of these matters Dublin Business School will immediately terminate my research in the department and that any qualifications from the School will be negated.

I make this declaration for the satisfaction of Dublin Business School believing the same to be true. It is a penalty for the violation of the Statutory Declarations Act 1938.

Signature

DECLARED before me by the said:

Who is personally known to me:
(or who is identified to me by:)

In the City of Dublin this day of

Commissioner for Oaths / Practicing Solicitor
Appendix 3

Dublin Business School (DBS)
Final Year Project
BA (Hons) Degree in Psychology

Research Topic: A study of interventions for early school leavers
Student Researcher: Emma Keogh, contact details:
Supervisor (DBS): Dr. Lucie Corcoran, contact details:

Background and Purpose: I am currently in my final year of a BA (Hons) Degree in Psychology and I am doing this research project as part of my final year project at DBS. I am working with Dr. Lucie Corcoran, whose contact details are included above. In my research I am interested in exploring the psychosocial benefits of using equine-assisted activities. Two centres have being asked to take part in my research, one which uses horses daily and one which doesn’t. Both centres will be given the same questionnaires over two different time periods first in December and then 6 weeks later.

What happens if I or my child (under 18) takes part? I will be visiting your centre during class time, at a time arranged with the manager. I will ask all learners to fill in a questionnaire booklet. It is a standard questionnaire designed for young people, to explore how they think and feel about themselves. If you or if under 18 years (a guardian) decide you do not want to take part you will remain in the classroom but will not have to fill in the questionnaires. Instead you will be asked to read quietly while the others take part.

What will happen to the results of the study? The information from the learner’s questionnaire responses will help us to examine the potential psychosocial benefits of using equine-assisted activities. The study’s results will be presented in a thesis and may be published in academic journals and presented at academic conferences. However at no point will any young person who participates be identifiable.

How will I or my child’s (if under 18) information be protected? Each person’s anonymity will be protected. No names will be recorded. When answering the questionnaires, each person will be asked to give their date of birth. This information will only be used to compare the individual pre and post data (pre refers to the first time the survey is filled in, and post refers to the second time the survey is filled in). All information will be stored in a secure location until the research is completed. Once the study has been completed the date of birth will be removed and all information will be destroyed after 2 years.

Voluntary Participation It is up to you (if over 18) and your guardian (if under 18) to decide whether you are going to take part or not. Participation is completely voluntary. You are free to withdraw from the study at any time.

Important: The consent form! There is a consent form attached to this information sheet. Every person participating in the study must have a consent form which you or your guardian has signed. Please note that research practice guidelines do not allow me to make any exceptions, and verbal permission cannot replace the signed consent form. It is important to remember to return the signed form to your centre as without it you or your child will not be allowed to take part.

Further Information: If you require any assistance or have any questions about the research study please feel free to contact me.

Thank you very much for supporting this research study. Please keep this information for your records.
CONSENT FORM

Title of Study: A study of interventions for early school leavers
Student Researcher: Emma Keogh, contact details
Supervisor (DBS): Dr. Lucie Corcoran, contact details:

Parent’s Name (if needed):

Learner’s Name:

I confirm that I have read and understood the Information Leaflet for Participants for the above research study and have received an explanation of the nature, purpose and duration of the study. I understand what my (or my child’s) involvement will be.

I have had time to consider whether I want to (or want my child to) take part in this study. Any questions have been answered satisfactorily.

I have explained this study (if under 18) to my child and I am happy that he/she understands what is involved.

I understand that my (or my child’s) participation is voluntary (that my child and I have a choice as to whether she/he participates) and that I (or my child) is free to withdraw at any time if she/he chooses to do so.

I also understand that I (or my child) will be asked to participate in a follow-up questionnaire in 6 weeks. I give my permission for this request to be made. I understand that taking part in this study is voluntary.

I understand that the information collected will be presented in a thesis and may be presented and/or published in academic journals and at conferences, but that no individual will be identifiable from the information.

I agree to take part (or for my child) to take part in the above study.

…………………………………………………………...…………………
Name of Participant (if over 18) Date Signature

…………………………………………………………...…………………
Name of Parent (if under 18) Date Signature
It is hypothesised that a youth’s sense of well-being will be increased after equine-assisted activities.

FLOURISHING SCALE ©Copyright by Ed Diener and Robert Biswas-Diener, January 2009

Below are 8 statements with which you may agree or disagree. Using the 1–7 scale below, indicate your agreement with each item by indicating that response for each statement.

• 7 - Strongly agree
• 6 - Agree
• 5 - Slightly agree
• 4 - Neither agree nor disagree
• 3 - Slightly disagree
• 2 - Disagree
• 1 - Strongly disagree

___ I lead a purposeful and meaningful life
___ My social relationships are supportive and rewarding
___ I am engaged and interested in my daily activities
___ I actively contribute to the happiness and well-being of others
___ I am competent and capable in the activities that are important to me
___ I am a good person and live a good life
___ I am optimistic about my future
___ People respect me

Scoring:
Add the responses, varying from 1 to 7, for all eight items. The possible range of scores is from 8 (lowest possible) to 56 (highest PWB possible). A high score represents a person with many psychological resources and strengths.
Youths taking part in equine-assisted activities will report higher levels of assertiveness.

**Instrument Title:** SocioCommunicative Orientation Scale (SCO)

**Instrument Author:** Richmond, V. P., & McCroskey, J. C.


**INSTRUCTIONS:** The questionnaire below lists twenty personality characteristics. Please indicate the degree to which you believe each of these characteristics applies to you while interacting with others by marking whether you (5) strongly agree that it applies, (4) agree that it applies, (3) are undecided, (2) disagree that it applies, or (1) strongly disagree that it applies. There are no right or wrong answers. Work quickly; record your first impression.

1. helpful
2. defends own beliefs
3. independent
4. responsive to others
5. forceful
6. has strong personality
7. sympathetic
8. compassionate
9. assertive
10. sensitive to the needs of others
11. dominant
12. sincere
13. gentle
14. willing to take a stand
15. warm
16. tender
17. friendly
18. acts as a leader
19. aggressive
20. competitive

**Scoring:**
For your assertiveness score, add responses to items 2, 3, 5, 6, 9, 11, 14, 18, and 20.
For your responsiveness score, add responses to items 1, 4, 7, 8, 10, 12, 13, 15, 16, 17
Hypothesis 3

It is predicted that decreased levels of classroom anxiety with reported in youths taking part in EAA

**Instrument Title:** Classroom Anxiety Measure  
**Instrument Author:** Richmond, V. P.  

This form is composed of statements students have used to describe how they feel in their classroom. After each statement, indicate the number that best describes how you generally feel while attending class. There are no right or wrong answers. Work quickly and circle your first impression. Please indicate the degree to which each statement applies to you by marking whether you:

- Strongly Disagree = 1; Disagree = 2; Neutral = 3; Agree = 4; Strongly Agree = 5

1. I feel apprehensive.  
2. I feel disturbed.  
3. I am peaceful.  
4. I feel relaxed.  
5. I feel uneasy.  
7. I feel fearful.  
8. I feel ruffled.  
9. I am jumpy.  
10. I feel composed.  
11. I am insecure.  
12. I feel satisfied.  
13. I feel safe.  
15. I am cheerful.  
16. I feel happy.  
17. I feel dejected.  
18. I feel pleased.  
19. I feel good.  
20. I feel unhappy.

**SCORING:** To compute your scores, add your scores for each item as indicated below:

Recode BOLDED questions with the following format:

1=5  
2=4  
3=3  
4=2  
5=1

After you have recoded the previous questions, add all of the numbers together to get your composite Classroom Anxiety score.
Score should be between 20 and 100. Scores of 80 and above indicate high classroom anxiety; Scores of 25 and below indicate low test or evaluation apprehension; Scores between 26 and 79 indicate moderate test or evaluation apprehension.

Non-verbal communication skills will be increased in youths who participate in equine-assisted activities

Hypothesis 4

Non-verbal communication skills will be increased in youths who participate in equine-assisted activities.

Instrument Title: Nonverbal Immediacy Scale-Self Report (NIS-S)
Instrument Author: Richmond, V. P., McCroskey, J. C., & Johnson, A. D.

DIRECTIONS: The following statements describe the ways some people behave while talking with or to others. Please indicate in the space at the left of each item the degree to which you believe the statement applies TO YOU.
Please use the following 5-point scale: 1 = Never; 2 = Rarely; 3 = Occasionally; 4 = Often; 5 = Very Often

1. I use my hands and arms to gesture while talking to people.
2. I touch others on the shoulder or arm while talking to them.
3. I use a monotone or dull voice while talking to people.
4. I look over or away from others while talking to them.
5. I move away from others when they touch me while we are talking.
6. I have a relaxed body position when I talk to people.
7. I frown while talking to people.
8. I avoid eye contact while talking to people.
9. I have a tense body position while talking to people.
10. I sit close or stand close to people while talking with them.
11. My voice is monotonous or dull when I talk to people.
12. I use a variety of vocal expressions when I talk to people.
13. I gesture when I talk to people.
14. I am animated when I talk to people.
15. I have a bland facial expression when I talk to people.
16. I move closer to people when I talk to them.
17. I look directly at people while talking to them.
18. I am stiff when I talk to people.
19. I have a lot of vocal variety when I talk to people.
20. I avoid gesturing while I am talking to people.
21. I lean toward people when I talk to them.
22. I maintain eye contact with people when I talk to them.
23. I try not to sit or stand close to people when I talk with them.
24. I lean away from people when I talk to them.
25. I smile when I talk to people.
26. I avoid touching people when I talk to them.
Scoring:
Step 1. Add the scores from the following items: 1, 2, 6, 10, 12, 13, 14, 16, 17, 19, 21, 22, and 25.
Step 2. Add the scores from the following items: 3, 4, 5, 7, 8, 9, 11, 15, 18, 20, 23, 24, and 26.
Total Score = 78 plus Step 1 minus Step 2.
Norms:
Females Mean = 102.0 S.D. = 10.9 High = >112 Low = <92
Males Mean = 93.8 S.D. = 10.8 High = >104 Low <83

Hypothesis 5

Increased feelings of compassion towards others are predicted in youths who participated in equine assisted activities.

Compassion Scale

**HOW I TYPICALLY ACT TOWARDS OTHERS**

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

<table>
<thead>
<tr>
<th>Almost Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Almost Always</th>
<th>5</th>
</tr>
</thead>
</table>

1. When people cry in front of me, I often don’t feel anything at all.
2. Sometimes when people talk about their problems, I feel like I don’t care.
3. I don’t feel emotionally connected to people in pain.
4. I pay careful attention when other people talk to me.
5. I feel detached from others when they tell me their tales of woe.
6. If I see someone going through a difficult time, I try to be caring toward that person.
7. I often tune out when people tell me about their troubles.
8. I like to be there for others in times of difficulty.
9. I notice when people are upset, even if they don’t say anything.
10. When I see someone feeling down, I feel like I can’t relate to them.
11. Everyone feels down sometimes; it is part of being human.
12. Sometimes I am cold to others when they are down and out.
13. I tend to listen patiently when people tell me their problems.
14. I don’t concern myself with other people’s problems.
15. It’s important to recognize that all people have weaknesses and no one’s perfect.
16. My heart goes out to people who are unhappy.
17. Despite my differences with others, I know that everyone feels pain just like me.
18. When others are feeling troubled, I usually let someone else attend to them.
19. I don’t think much about the concerns of others.
20. Suffering is just a part of the common human experience.
21. When people tell me about their problems, I try to keep a balanced perspective on the situation.
22. I can’t really connect with other people when they’re suffering.
23. I try to avoid people who are experiencing a lot of pain.
24. When others feel sadness, I try to comfort them.

Scoring

Coding Key:
Kindness Items: 6, 8, 16, & 24
Indifference Items: 2, 12, 14, & 18 (Reversed Scored)
Common Humanity: 11, 15, 17, & 20
Separation: 3, 5, 10, & 22 (Reversed Scored)
Mindfulness: 4, 9, 13, & 21
Disengagement: 1, 7, 19, & 23 (Reverse Scored)
To reverse-score, change the following values: 1 = 5, 2 = 4, 3 = 3, 4 = 2, 5 = 1
To compute a total Compassion Score, take the mean of each subscale (after reverse-scoring) and compute a total mean.

Please remember that if you plan to examine the subscales separately, you should not reverse-code. Before reverse-coding, for example, higher indifference scores represent more indifference, but after reverse-coding higher indifference scores represent less indifference. This is why the subscales of indifference, separation, and disengagement are reverse-coded before taking an overall compassion mean.
