

Horse Power – promoting social competence development through equine-assisted learning

A mixed methods study on the perception of equine-assisted learning's influence on adolescent social competence

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Resumé

Background: As animals have played an important part in humans' lives for the most part of human history (Kellert & Wilson, 1995), it is eligible to assume that contact with them can have an influence on humans. Research on the impact of human-animal interactions has received little attention in research (Amiot & Bastian, 2015; Fine, Tedeschi, & Elvove, 2015). This thesis aims at answering the question if contact between adolescents and horses, in particular equine-assisted learning (EAL), has an impact on adolescent social competence.

Method: In a mixed methods study, id est by interviews and two online surveys, this question will be investigated. The theoretical background for this study is built by the theories of Kolb (1984) and Vygotsky (1978). Within the scope of this thesis the following questions will be answered: At first, nine experts for EAL were interviewed about their perception of the influence of EAL on adolescent social competence. In the second question the adolescents' perception of the issue is investigated. The third research question, looks at if the parents' perceive an influence on their childrens' social competence.

The interviews with the experts build the basis for the adolescent and the parent online survey. 16 people answered the survey for the adolescents and five caregivers answered the survey for the parents. The gathered data was summarised to four categories in order to demonstrate the connection between EAL and social competence.

Results: The results were analysed and discussed in relation to current research on EAL. This study shows that the study participants perceive a positive influence of EAL on adolescent social competence. This affirms other studies results on the issue (see Pendry, Carr, Smith, & Roeter, 2014). Particularly emphasised should be this thesis' results on the most positively perceived influence of EAL on self-confidence, one of the essential aspects of social competence. Furthermore, the analysis of the results of the adolescent survey showed reports of remarkably increased calmness through EAL. This is affirmed in the parent survey.

In summary, it can be said that the study participants from all three groups that were investigated perceived a positive influence of EAL on adolescent social competence.

Sammendrag

Bakgrunn: For mesteparten av menneskets historie har dyr spilt en viktig rolle (Kellert & Wilson, 1995). Derfor kan man anta at kontakten med dyr har en påvirkning på mennesker. Forskning på interaksjoner mellom dyr og mennesker har fått lite oppmerksomhet (Amiot & Bastian, 2015; Fine et al., 2015). Denne masteroppgaven undersøker spørsmålet om kontakten mellom ungdom og hest, og spesielt hesteassistert læring (HAL), påvirker ungdoms sosial kompetanse.

Metode: Spørsmålet undersøkes gjennom en mixed methods studie, dvs. at det besvares gjennom intervjuer og to nettbaserte spørreskjemaer. Det teoretiske rammeverk for forskningsspørsmålet bygger på teorier fra Kolb (1984) og Vygotsky (1978). I denne masteroppgaven besvares tre forskningsspørsmål: I begynnelsen spørres det om ni eksperter for HAL opplever at HAL påvirker ungdoms sosial kompetanse. Det andre spørsmålet undersøker hvordan ungdommenes opplevelse er. Det tredje forskningsspørsmålet er opptatt av foreldrenes opplevelse. Det undersøkes om de legger merke til en forandring i deres barns sosial kompetanse.

Intervjuene med ekspertene er grunnlaget både for spørreskjemaet for ungdommene og det for foreldrene deres. Det nettbaserte spørreskjema for ungdom ble besvart av 16 personer. Spørreskjemaet for foreldre besvartes av fem foresatte. Dataene ble samlet i fire kategorier og brukes som grunnlag for å vise til sammenhengen mellom HAL og sosial kompetanse.

Resultater: Resultatene ble analysert og diskutert opp mot aktuell forskningslitteratur på HAL. Denne studien viser at deltagerne opplever en positiv innflytelse av HAL på ungdoms sosial kompetanse. Dette understreker funnene fra andre studier (se Pendry, Carr, et al., 2014).

Et resultat av denne masteroppgaven som bør fremheves er den særdeles positive oppfattelsen HAL har på selvtillit, som er et vesentlig aspekt av sosial kompetanse. I analysen var det også påfallende at ungdom opplevde en økende ro gjennom HAL. Dette ble bekreftet av foreldrene.

Avslutningsvis kan det sies at studiedeltagerne av de tre undersøkte gruppene opplever at HAL har en positive innflytelse på ungdoms sosial kompetanse.

Zusammenfassung

Hintergrund: In der Geschichte der Menschheit spielen Tiere in vielerlei Hinsicht eine große Rolle (Kellert & Wilson, 1995). Es liegt daher nahe anzunehmen, dass der Kontakt mit Tieren eine Auswirkung auf Menschen hat. Noch gibt es wenig Forschung darüber, ob Menschen durch die Interaktionen mit Tieren beeinflusst werden (Amiot & Bastian, 2015; Fine et al., 2015). Die vorliegende Arbeit geht der Frage nach, ob der Kontakt zwischen Jugendlichen und Pferden, im Speziellen der Einfluss des Heilpädagogischen Reitens (equine-assisted learning) eine Auswirkung auf deren soziale Kompetenz hat.

Methode: Die Herangehensweise an diese Fragestellung erfolgt anhand einer *mixed methods* Studie, das heißt sie wird mittels Interviews und zwei Onlinebefragungen erforscht. Den theoretischen Hintergrund der Forschungsfrage bilden die Theorien von Kolb (1984) und Vygotsky (1978). Im Rahmen dieser Masterarbeit werden folgende Forschungsfragen beantwortet: Zu Beginn werden neun Experten für Heilpädagogisches Reiten befragt, ob sie durch die Arbeit mit dem Pferd einen Einfluss auf die soziale Kompetenz Jugendlicher wahrnehmen. In der zweiten Frage wird untersucht wie die Wahrnehmung aus der Sicht der jugendlichen Klienten ist. Die dritte Forschungsfrage beschäftigt sich mit der Wahrnehmung der Eltern dieser Jugendlichen. Es wird untersucht ob sie eine Veränderung der sozialen Kompetenz ihrer Kinder beobachten.

Die Interviews mit Experten bilden die Grundlage sowohl für die Erstellung des Onlinefragebogens für die Jugendlichen als auch den der Eltern. Die Onlineumfrage für die Jugendlichen wurde von 16 Personen beantwortet. An der Umfrage für die Erziehungsberechtigten haben fünf betroffenen Eltern teilgenommen. Die erhobenen Daten wurden in vier Kategorien zusammengefasst und dienen als Basis um die Verbindung zwischen Heilpädagogischem Reiten und sozialer Kompetenz aufzuzeigen.

Ergebnis: Die Ergebnisse wurden analysiert und in Zusammenhang mit aktueller Forschung zum Thema Heilpädagogisches Reiten diskutiert. Die Studie zeigt auf, dass die befragten Personen einen positiven Einfluss des Heilpädagogischen Reitens auf die soziale Kompetenz Jugendlicher wahrnehmen. Das unterstreicht die Ergebnisse anderer Studien zu diesem Thema (see Pendry, Carr, et al., 2014).

Ein besonders hervorzuhebendes Ergebnis dieser Masterarbeit ist der als überaus positiv wahrgenommene Einfluss von Heilpädagogischem Reiten auf das Selbstvertrauen, einer der wesentlichen Aspekte sozialer Kompetenz. Auffallend in der Analyse der Ergebnisse war auch, dass Jugendliche eine zunehmende innere Ruhe durch Heilpädagogisches Reiten spüren. Dies wird von den Eltern bestätigt.

Zusammenfassend kann gesagt werden, dass die Studienteilnehmer aller drei befragten Gruppen im Heilpädagogischen Reiten einen positiven Einfluss auf die soziale Kompetenz Jugendlicher sehen.

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Preface

After a great exchange year in Oslo, I returned to Blindern Campus after a year back home. I have to admit that it wasn't without some feelings of trepidation that I chose to make the move and take my master's degree in Oslo. But it turned out to have been the right choice; studying at the University of Oslo was another great experience. Now, two incredibly intense years on Blindern Campus have come to an end, and I'll leave university both with a heavy heart and a smile on my face, looking forward to new experiences.

While writing this preface, I realised that I have many people to thank for their support and cheers throughout these last two years:

During my time in Oslo, I met amazing people who made my time here great. Thank you for the shared dinners with the 'Mandagsklubben', and all the mornings we met for coffee that made it possible for me to start my days early. Thank you also for the countless breaks and lunches at Kjeller'n that were definitely necessary to keep me going through all the intense exam and master-writing periods. A special thanks to Thea, Hanne and Peer who managed to make Helga Eng's Hus feel like home for me during the last two years.

A huge thank you to Klara, who listened to my whinging and strops when things didn't go the way I had hoped, and my excitement and happiness when things actually worked out. Thank you for endless Skype sessions and long pep-talks to motivate me to keep going!

Another big thank you goes to Mikkel who did an amazing job and helped me interpret my survey data. Without your help, I would never have got so far in analysing it all!

I also need to thank my supervisor, Joshua Lawrence, for believing that a thesis like this one is possible at all, and for believing that my ambition of combining the viewpoints of three different groups of people is a manageable challenge. Even though my courage that this project was possible waned at times, you kept believing in it and pushed me until I started believing in it again. Thank you for inspirational tips, food for thought and advice along the way.

Most of all, I want to thank my parents who made it possible for me to go on this adventure. Their moral support made me trust in myself enough to move abroad once again, and without

their financial support the “Master in Oslo” mission would not have been possible at all. Your yearly visits and the warm welcomes during my visits back home made sure that homesickness never became an issue. Thank you Papa for the hours of tech-support from home, and thank you Mama for all the discussions about interesting issues to include in the thesis!

Last but not least, I want to thank the experts who volunteered for interviews, and every participant who answered the surveys! Your help has made this study possible in the first place. Your experiences are the basis for this thesis.

Katharina Roittner

Oslo, Mai 2018

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1 Introduction

This chapter aims to introduce the concepts of equine-assisted learning (EAL) and social competence to the reader. A four-category model is introduced to understand the connection of the two topics. Following that, the scope and objective are described, and the problem statement and the research questions for the study are determined.

Twenty years ago, Zins et al. (1998) wrote that the world is a social one. This has not changed, and in today's society, social competence is a necessity to succeed in personal and professional settings (Semrud-Clikeman, 2007). Rose-Krasnor (cited by Rubin, Booth, Rose-Krasnor, & Mills, 1995, p. 113) defines social competence as “the ability to achieve personal goals in social interaction while simultaneously maintaining positive relationships with others over time and across settings”. Good social competence is crucial for positive interactions with others in everyday life, which can be seen as particularly important for children and adolescents. Adolescents are in a phase entailing major changes in their development, and they spend large parts of their everyday lives, including social interactions, with family, teachers and peers. Being competent in interpersonal interaction can therefore be seen as a crucial competence for today's youth. Shonkoff and Phillips (2000) describe that social competence as an aspect of child development that holds a vital role in later academic achievement, mental health, and overall wellbeing of the child.

According to research, there is reason to think that interaction with animals might support the development of social competence in adolescents (Arkow, 2015; Hart & Yamamoto, 2015; Julius, Beetz, Kotrschal, Turner, & Uvnäs-Moberg, 2012; Serpell, 2015). In particular, experiences with large animals may have a positive impact on an adolescent's social competence. According to recent research, equine-assisted learning can offer possibilities to support the development of social competence (Ho, Zhou, Fung, & Kua, 2017; PATH Intl., 2018; Pendry, Carr, et al., 2014). Surprisingly, there have been few studies that examine EAL and adolescent social competence, (see Pendry, Carr, et al. (2014) for example). Due to the importance of social competence in everyday life, and the challenging developmental phase adolescents are going through, research on how to facilitate a positive development of social competence for adolescents is crucial.

Four relevant categories that connect EAL and social competence in adolescents have been hypothesized, as is illustrated in Figure 1. I will review the various subcategories and aspects to describe how EAL might influence social competence as a framing for the proposed research topic

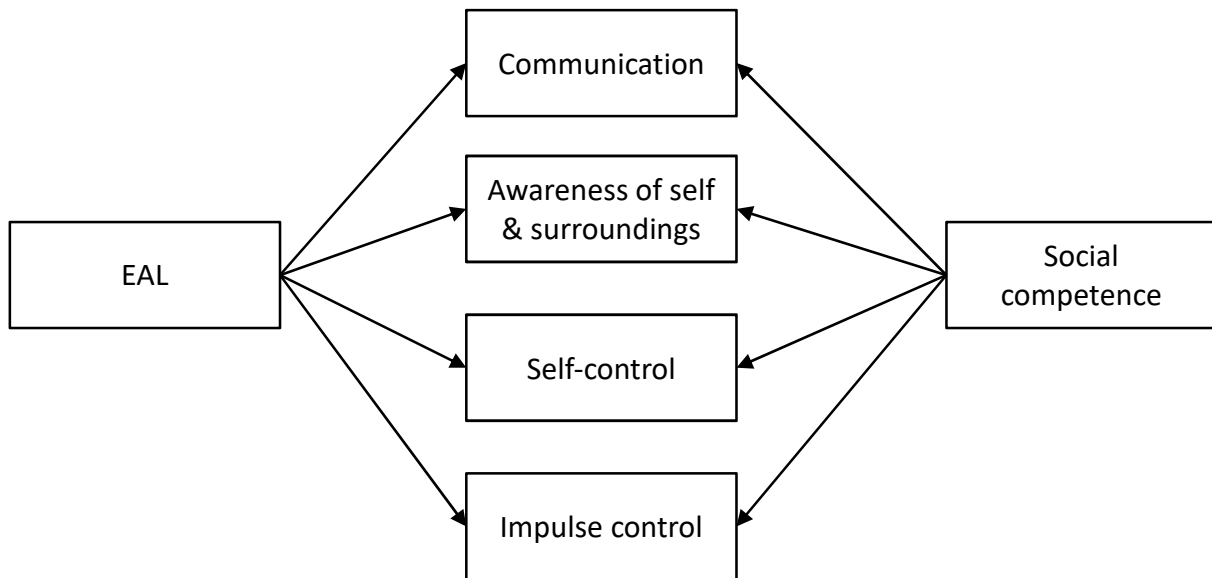


Figure 1. Connection of EAL and social competence

In this thesis, a mixed methods study is conducted to investigate the perceived influence of equine-assisted learning (EAL) on adolescents' social competence. The study includes interviews with experts who offer EAL sessions, a survey for adolescents, and a survey for the adolescents' parents. All three methods aim at investigating the impact of EAL as perceived by the different groups. My results highlight aspects of EAL that are perceived as particularly helpful in the development of social competence.

1.1 Scope and objective

This thesis will contribute to the field of equine-assisted intervention research. In particular, this thesis focuses on equine-assisted learning and its perceived influence on adolescents' social competence. By means of several forms of investigation, the aspects perceived as most helpful will be highlighted. This is done by interviewing experts on EAL to explore their experience and perception of EAL's influence on social competence in adolescent clients. Furthermore, a survey tries to gather information about the adolescents' perception of their situation and the influence EAL had on them. The third investigation is a survey among the

adolescents' parents that investigates their perception of possible changes in the adolescents' social competence since he/she started with EAL. Overall, this study aims at highlighting the aspects of EAL that are perceived as most influential on social competence in adolescents.

Problem statement and research question

The goal of this thesis is to highlight and understand how equine-assisted interventions can support adolescent social development. Although there is existing research on this topic (Ho et al., 2017; Pendry, Carr, et al., 2014), these studies often have methodological weaknesses and struggle to generalise their findings. Little systematic research has been conducted, and most studies can only provide anecdotal evidence to support the effectiveness of the intervention. (Anestis, Anestis, Zawilinski, Hopkins, & Lilienfeld, 2014). Methodological weaknesses are not surprising when one considers the difficulty of conducting research in the field of EAL which does not have standardised practices or explicit shared goals across programmes. The thesis marks a significant contribution to this area of research. It is one of the most extensive studies of its kind that has been conducted in Europe to date.

There is reason to think that interaction between humans and animals might facilitate the development of social competence. Interactions with horses may be particularly facilitative of the skills which are requisite to or necessary for social competence. Social competence has been connected to good mental health, academic success and a good quality of life (Rubin et al., 1995). Due to the relevance of social competence in everyday life, supporting its development is important for adolescents to be able to grow up to be socially competent adults.

This study aims at analysing how experts, clients and clients' parents perceive the impact of EAL, and if the perceived impact is categorised as positive, neutral or negative. By analysing the gathered data, the author tries to highlight aspects of EAL that are perceived as particularly relevant for social competence.

This leads to the assumption that social competence is a skill that can be positively influenced through EAL. In order to investigate the experience that different groups have of the accuracy of this assumption, the research questions for this study are as follows:

1. How do experts working as EAL instructors perceive the influence of EAL on social competence in their adolescent clients?

2. How do adolescent participants of EAL perceive its influence on their social competence?
3. How do parents of adolescent EAL-participants perceive the influence of EAL on their children's social competence?

1.2 Background

Animals have been an important part of humans' lives for the majority of human history and prehistory (Kellert & Wilson, 1995). Domesticated animals provided humans with food and clothing, and provided entertainment, leisure and companionship (Amiot & Bastian, 2015), and played an important role in our success as a species. Despite the major role animals played in the development of the human species, research on reciprocal interactions between humans and animals has received little attention (Amiot & Bastian, 2015; Fine et al., 2015). Amiot & Bastian (2015) ascribe this to the peripheral status of animals, as well as to the tendency to not recognise their psychological qualities.

The Biophilia hypothesis was popularised by E. O. Wilson, a Harvard biologist, who defines it as "the innately emotional affiliation of human beings to other living organisms" (Kellert & Wilson, 1995, p. 31). Children in today's technological society have fewer hours of interaction with animals. However, having contact with animals can provide an opportunity to experience companionship and other learning experiences (Levinson, 1978).

The research field of equine-assisted learning is a relatively new one (Lac, 2017), however the therapeutic value of horses was already known to the ancient Greeks, who prescribed horseback riding to improve physical and mental well-being. The documented use of equine-assisted interventions to treat medical issues, however, only dates back to the 1950s, where Liz Hartel demonstrated the therapeutic value of horses in her recovery from postpolio. By the 1960s, therapeutic riding began to be used more widely, with Germany being the pioneer in the therapeutically beneficial use of horses for a variety of interventions (Latella & Abrams, 2015).

In this thesis, a form of equine-assisted intervention called "equine-assisted learning" (EAL) is examined more thoroughly. According to the website of the Professional Association of Therapeutic Horsemanship International (PATH Intl.) (2018), EAL is defined as "an

experiential learning approach that promotes the development of life skills for educational, professional and personal goals through equine-assisted activities”. The World Health Organisation (WHO) (1999) describes life skills as psychosocial skills. This is relevant for this thesis considering the different perceptions of social competence in different cultures (Semrud-Clikeman, 2007).

During equine-assisted interventions, the client’s exploration of his/her feelings and behaviour increases self-awareness and empathy, as well as encouraging personal growth and development (Latella & Abrams, 2015). This can be useful for various groups of clients ranging from children and adolescents who struggle with social competence to managers wishing to develop their leadership skills (Adams et al., 2015; Dell et al., 2011; Ewing, MacDonald, Taylor, & Bowers, 2007; Gehrke, 2009; Hemingway, Meek, & Hill, 2015; Ho et al., 2017; Kelly, 2014; Pendry, Carr, et al., 2014; Pendry & Roeter, 2013; Pendry, Smith, & Roeter, 2014; Stock & Kolb, 2016).

The recency of these articles shows that there is a considerable amount of relatively new research on the issue of EAL, but none of it combines the viewpoints of the clients, their parent(s) or other caregivers, and the pedagogue who provides the intervention to provide a balanced picture on the perceived impact of EAL on social competence. Furthermore, research on the issue of EAL and social competences as well as the focus on social interaction is rare. The only research on adolescents’ social competence and EAL was conducted by Pendry et al. (2014). Considering the difficulty of adolescence, more research on how to help them to grow up to be socially competent and empathic adults is important.

1.3 Theoretical framework

Research on EAL and social competence is based on many different theories that were developed through a broad variety of methods. No consistency can be seen in the appliance of theoretical frameworks for the studies (Carlsson, 2016; Pendry, Carr, et al., 2014). Carlsson (2016) considers this a positive fact, as the wide variety of clients leads to a broad variety of approaches. She mentions examples of theoretical frameworks that are used, namely attachment theory, social cognitive theory, or empowerment theory. In another article, Carlsson, Ranta, and Traeen (2015) suggest mentalisation theory as a possible frame, while Pendry, Carr, et al. (2014) use positive youth development perspective as theirs.

For the thesis at hand, a combination of theories seems suitable. The theories that will be combined are Kolb's (1984) experiential learning theory, and Vygotsky's (1978) theory on socio-cultural development, and their combination is based on the author's understanding of the theories. Experiential learning theory is a holistic theory of learning that is based on principles of John Dewey and Lev Semyonovich Vygotsky amongst others (Kolb, 2014), which opens up for forming a concept that combines his and Vygotsky's theories in a deeper way.

Kolb (1984) defines learning as “the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience” (p. 41). Learning is understood as a major adaption of an individual, which makes the theory applicable to all arenas of life. Learning, as seen in the experiential learning approach, is a process that is present at all levels of society (Kolb & Kolb, 2009). In experiential learning theory, a main concept is the learning cycle, which is a four-stage model of learning (see Figure 2). Its stages include two related modes of grasping experience, and two related modes of transforming experience

(Kolb, Boyatzis, & Mainemelis, 2001). To learn, an individual will pass all cornerstones of the learning cycle, namely concrete experience, reflective observation, abstract conceptualisation, and active experimentation.

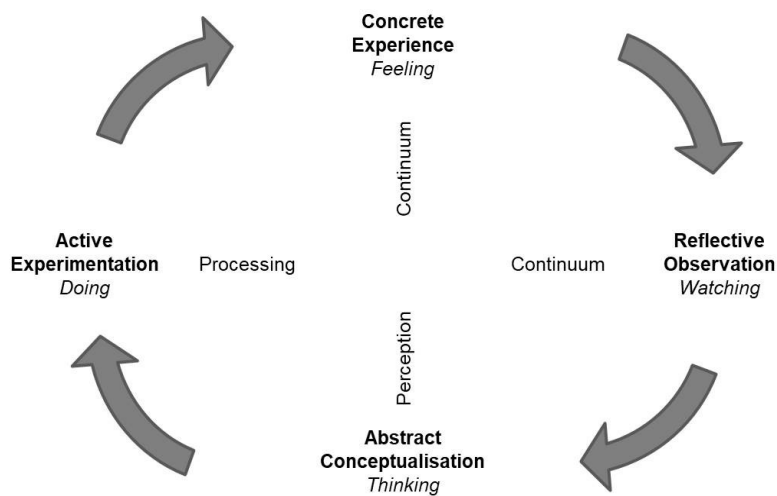


Figure 2. Kolb's (1984) learning cycle

Kolb's (1984) experiential learning cycle fits with the description and conceptualisation PATH Intl. (2018) offers for EAL. Through application of experiential learning to EAL, it is possible to understand why spending time with horses during a guided intervention such as EAL can have a positive effect on clients. Experiencing concrete aspects of social competence can help a client in opening up new ways of seeing and interpreting social situations. As Kolb (1984) describes experiential learning's perspective on learning, “the belief that self-discovery

and improvement can be achieved through a linear cycle of personal reflection and a successful merging of personal and social knowledge”.

A point of critique on Kolb’s (1984) learning cycle is that it does not consider the social context of the experience that is necessary for learning. Further, it does not consider the influence the social context has on what is being learned (Yardley, Teunissen, & Dornan, 2012). Due to the importance of the influences of social context on the development of social competence, Kolb’s experiential learning theory is combined with aspects of Vygotsky’s (1978) socio-cultural theory. Since Kolb’s (1984) learning cycle is a broad explanation of learning, Vygotsky’s (1978) focus on the social aspects of learning will be integrated into Kolb’s (1984) learning cycle, to adapt it for the purpose of this thesis. According to Kolb (1984), a concrete experience is a prerequisite for learning. As social competence is a competence that requires a social context, the author suggests that the experiences that are needed to gain social competence have to be social too. This is not mentioned as explicitly in Kolb’s (1984) theory as it is in Vygotsky’s (1978) theory on socio-cultural learning, therefore the combination of these two theories was chosen as the framework for the thesis at hand.

Socio-cultural theory sees learning as embedded in a socio-cultural context. Vygotsky (1978) sees the developmental processes humans go through as rooted in the relationship between individual and social history. In his opinion, learning and development are interrelated. A central statement by Vygotsky (1978) is his assumption that “Every function in the child’s cultural development appears twice, on two levels. First on the social, and later on the psychological level [...]” (p. 128).

In relation to Kolb’s (1984) learning cycle, the first base, concrete experience (feeling), could be interpreted as the social level Vygotsky (1978) refers to. An experience arises usually from a situation that inevitably is socio-cultural. Regarding EAL, a given experience most likely is social, as it arises from a situation where at least a horse, most probably the horse’s handler, and sometimes other people also, are present. Therefore the experience, as the most essential aspect of Kolb’s theory on learning, is a social one, as an experience never happens without context and always stands in relation to something.

Vygotsky’s (1978) second level, the psychological one, could be placed at Kolb’s (1984) third base of the learning cycle, the abstract conceptualisation (thinking). Vygotsky (1978) described the psychological level as intrapsychological, hence taking place within a person’s

mind. Kolb's (1984) abstract conceptualisation can be seen as such an intrapsychological process.

The two remaining bases in Kolb's (1984) learning cycle, reflective observation and active experimentation, can be explained with another concept by Vygotsky (1978). The second and fourth base, can be understood in relation to the Zone of Proximal Development (ZPD). The ZPD is defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86). With the ZPD he explains "the transformation of an interpersonal (social process) to an intrapersonal one [...]" (p. 131), which can be seen as equivalent to Kolb's (1984) base of reflective observation. The base of active experimentation could be understood as a fulfilled learning process, and a 'completed' step in the ZPD, where the learner is able to do a newly learned thing on his/her own. The combination of the two theories is illustrated in Figure 3.

This way of theoretically understanding, learning as a continuous process that is grounded in (a social) experience, seems a suitable approach to the author.

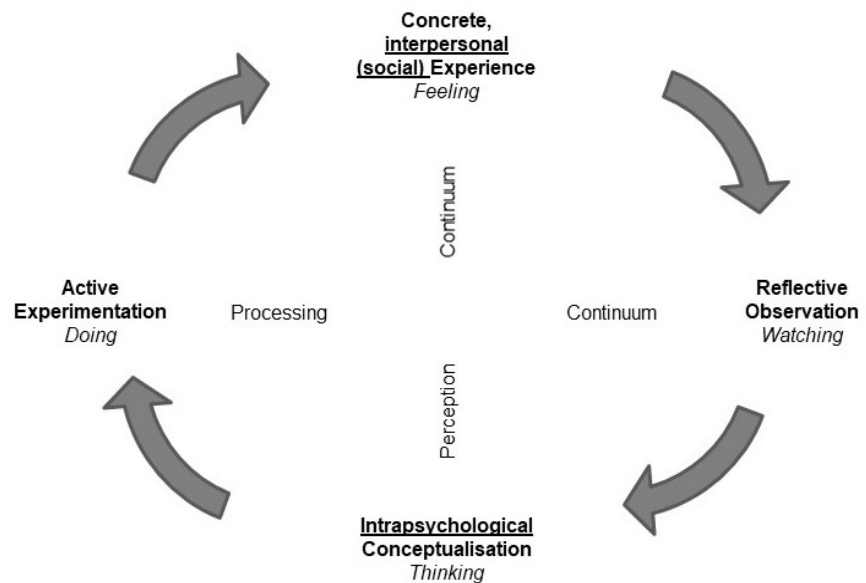


Figure 3. Connection of Kolb's (1984) and Vygotsky's (1978) theories

1.4 Structure and content

This thesis aims to investigate how experts working in the field, adolescents, and their parents perceive EAL's impact on adolescent social competence. In this thesis, a study was conducted to examine the aforementioned perception of EAL on social competence in adolescents.

Through a mixed methods study, including qualitative interviews and an online survey, the research question is investigated. The thesis is divided into seven chapters.

In chapter one, the scope and objective of this thesis are clarified, and the problem statement and research question defined. Furthermore, a background on the topic of EAL, as well as on the importance of social competence is given, and the theoretical framework for the thesis is explained. The chapter concludes with an overview of the thesis' content. Chapter two focuses on a literature review on the issues of human-animal relationships, EAL and social competence. The chapter is subdivided into three, with one part each describing different aspects of human-animal relationships, equine-assisted learning, and social competence. Chapter three introduces the different aspects of the thesis' methodology. General information on the research design, and research method is described. In addition, more detailed information is given about the process of gathering data. In chapter four, the process of analysing the data gathered is thoroughly described in order to present the results in chapter five. In chapter five, the results of the interviews and the surveys are presented together in order to depict a picture that shows connections between various aspects found in the data. Chapter six discusses the results and links them with findings from other relevant research. Moreover, the study's limitations are described, and further research is suggested. In the last chapter, the study's main findings are summed up and the research questions are answered.

2 Literature review

In this chapter, theory on equine-assisted interventions, EAL and underlying issues will be explicated based on literature on the issue. Firstly, human-animal relationships and physical impacts of contact with animals will be explained on the basis of existing literature. Secondly, equine-assisted interventions, their history and effectiveness, as well as the relevant implications of EAL are described. The third and last part of the literature review examines social competence and the understanding of the concept in this thesis.

2.1 Human-animal relationships

Interest in the possible impact of human-animal relationships has increased in the past few decades (Fine & Beck, 2015), as is visible in the increasing amount of studies that are conducted on the issue of human-animal interactions and their potential health benefits for humans. Many of these studies are essentially built on the foundation of three theories. Beck & Katcher (2003) describe two complementary explanations for the effectiveness of human-animal relationships, namely the Biophilia hypothesis and social support theory. They suggest that these theoretical approaches can be applied alternatively, as well as in combination. More recently, Fine & Beck (2015) suggested that three theories can be explanatory of the human-animal bond. They confirm the theories suggested by Beck & Katcher (2003), but add attachment theory as a third explanatory factor.

2.1.1 The human-animal bond

The human-animal bond has been explained essentially with three different theories, Biophilia, social support theory and attachment theory. These theories will be elaborated in the following paragraphs.

Biophilia

A common explanation for the calming effects animals can cause in humans is suggested in the Biophilia hypothesis by E. O. Wilson (Kruger & Serpell, 2006). One of the thesis' core

concepts is that humans are naturally attuned to animals (Fine et al., 2015). The human-animal relationship has its roots back to when humans lived as hunter-gatherers. Animals served as a source of food and clothing, but also as work and companion animals. This shared history leads to humans and animals having a natural instinct to form relationships with one another (Amiot & Bastian, 2015; Kellert & Wilson, 1995). The concept of Biophilia hypothesises that “humans are innately interested in animals due to evolutionary forces that made attention beneficial for survival” (Fine et al., 2015, p. 23). An argument for that was the human tendency to feel empathetic towards animals, which can be seen as a trait that might reflect a more general capacity of an individual to care for human infants. It was a necessity to survive and thrive and can be seen as an extension of the social bonding process that mothers have for their children (Bradshaw & Paul, 2010). Furthermore, empathy towards animals is considered a predictor of human-human empathy (Taylor & Signal, 2005).

Social support theory

Social support theory is based on the description of positive health effects of human social companionship and the view on animals as a source of social support (Beck & Katcher, 2003). Beck (2014, p. 35) describes social support as the “physical and emotional comfort given to us by our family, friends, co-workers and others [...]”. He points out that some of the behaviours that are comforting for humans are part of humans’ interaction with animals. The same applies for emotions humans experience in social situations, which are present in human-animal interaction as well. Several studies report positive physical effects in humans after contact with animals. Beck (2014) points out that a characteristic of bonds is that they are mutual, and refers to studies showing that animals release oxytocin when stroked by humans. In the case of horses, a study by Lynch, Fregin, Mackie & Monroe (1974) finds reduced heart rates in horses when stroked by a human. Beck (2014) concludes that humans can find the social support they desire in the comfort they get from the company of animals.

In view of the theory on social support, animals can present a buffer against negative effects caused by low levels of social support, which in turn can prevent the effects the lack of human social support can have on a human being (Amiot & Bastian, 2015) and can be seen as a source of social support (Beck & Katcher, 2003). The buffering effect against stress can be located in the decreased activity of the HPA axis (Beetz, Julius, Kotrschal, & Uvnäs-Moberg, 2010).

Attachment theory

Another central theory in the field of human-animal relations is attachment theory as developed by Bowlby and the theory on social support (Amiot & Bastian, 2015; Fine et al., 2015). Bachi, Terkel & Teichmann (2012) described the application of attachment theory to equine-assisted therapy. She considers the presence of the horse as helpful for evoking feelings, thoughts and behaviours in the client. Aspects of attachment theory, such as safe haven, affect mirroring, reflective functioning and non-verbal communication are central in equine-assisted therapy as well.

Relationships with others have a nurturing effect on mammals, a reason for the, usually quick, development of rapport between a client and the therapy animal. Clients who do not perceive being around animals as nurturing will be unlikely to gain positive effects of interactions with them. The bond between the animal's owner and the animal can act as an example for a relationship with mutual trust and nurturance. To observe such a relationship can promote trust in the party offering the intervention and the animal, and further help forming a relationship with the person offering the intervention and the animal (Chandler, 2017).

Yorke, Adams, and Coady (2008) mention that even if emotions in animals can be challenging to interpret, people with experience of horses can improve their accuracy of interpreting equine-behaviour that might indicate emotion. A reason for the possible intense connections between humans and equines can be found in the close body-to-body contact of horse and client during mounted work or grooming. Yorke et al. (2008, p. 19) write, "As a result of the close physical contact involved in riding and grooming horses, a type of 'physical sign language' develops, establishing a deep rapport, intimacy, and mutual understanding".

Physical effects of human-animal interactions

Despite differences in how humans and animals such as horses express their emotions, a deep, non-verbal, affective understanding that is felt by both human and animal may exist, and its behavioural and psychological equivalents can be measured (Julius et al., 2012). A central aspect indicating positive effects for humans from human-animal relationships can be found in oxytocin, a hormone associated with a decrease in cortisol levels, and a subsequent reduction in anxiety and stress. Furthermore, oxytocin is connected to increased social interaction and communication (Beetz et al., 2010).

Positive interactions between a dog and a human increases the levels of oxytocin, endorphins, and dopamine in both parties (Chandler, 2017). Furthermore, research suggests that positive effects on different parameters connected to stress can be found (Beetz, Uvnäs-Moberg, Julius, & Kotrschal, 2012), and it is suggested that interactions between humans and animals can decrease cortisol levels, reduce heart rate and blood pressure in humans (Beetz et al., 2012).

Positive physical contact triggers the sensory nerves in the skin, which in turn will trigger a release of oxytocin. Oxytocin is a hormone responsible for example for increased social interaction, reduced aggression in rats. Touching an animal is connected with much lesser inhibition than touching another human being (Zeller, 2001). Physical effects of human-animal contact can be particularly prevalent in human-horse relationships, as they are characterised by close physical contact. Physical contact between a client and the horse occurs during mounted activities (riding) and grooming the horse (Beetz et al., 2010). Animal research has shown that long-term effects of oxytocin can lower cortisol levels and stress symptoms, which generates a good precondition for learning (Chandler, 2017).

Moreover, physical contact is seen as beneficial for communication, especially for non-verbal communication (Zeller, 2001). Close physical contact between horse and client provides an opportunity for closeness, mutual understanding without words, security, trusting in someone else, care and more. The aspects of trusting someone else, the feeling of security and closeness are especially relevant when dealing with traumas (Yorke et al., 2008). However, it can be just as relevant in the face of other challenges like a troubled upbringing or violence in the family or close surroundings (McCormick & McCormick cited by Frederick, Ivey Hatz, & Lanning, 2015). Security and closeness are important experiences for children and adolescents who have experienced or still experience attachment difficulties and struggle to accept closeness (Bachi et al., 2012).

The involvement of animals in animal-assisted interventions, and particularly horses in equine-assisted interventions, was seen as an essential factor for increased relaxation, communication and interaction between client and handler of the horse (Beetz et al., 2010). Still, the benefits of human-animal relationships are only slowly achieving greater recognition, even though several studies find positive results on physical measures in both humans and animals (Amiot & Bastian, 2015; Beetz et al., 2012; Friedmann, Katcher, Lynch, & Thomas, 1980; Odendaal & Meintjes, 2003; Shiloh, Sorek, & Terkel, 2003). Despite these

results, more research on this issue is needed, as is pointed out by Kruger & Serpell (2006). They point to studies on various physical measures on for example stress, anxiety and cholesterol-levels which show conflicting results, but due to methodological differences between the studies no general conclusions on animals' effect on human arousal can be drawn. Beck (2014, p. 35) concludes, "For some, pets afford increased opportunities to meet other people, while for others, pets permit people to be alone without being lonely". In matters of EAL, the first aspect of this citation, namely the increased opportunities to meet other people, seems to be most relevant.

Conclusion

Regardless of the theory used to explain human-animal relationships, all theories emphasise the positive effects of human-animal interactions. "The presence of a friendly animal is said to stimulate social interaction, not only with this particular animal but also between the humans present" (Julius et al., 2012, p. 45). The animal acts as the social catalyst in these situations, which results in more contact initiations and participation in longer conversations among humans. In today's technological world, people are missing something that was a support for the development of their social competence.

2.1.2 Equine-assisted interventions

Equine-assisted interventions are a subgroup of the general concept of animal-assisted interventions (Frewin & Gardiner, 2005). Nowadays one can find many different forms of interventions with horses, however, along with animal-assisted interventions in general, equine-assisted interventions present a relatively new research field (Fine et al., 2015; Serpell, 2015). Several relatively new studies show tendencies of positive effects on humans' physical and psychological health from different forms of equine-assisted interventions (Kendall, Maujean, Pepping, & Wright, 2014; Latella & Abrams, 2015).

It is important to mention that terminology is not consistent and one and the same term is sometimes used for different interventions with horses (De Santis et al., 2017). Unclear use of terminology can make it difficult for clients to choose between interventions. It can be seen as particularly problematic that the scientific field does not distinguish consistently enough

between therapeutic interventions, pedagogical interventions and activities that do not require a minimum of education for the horse’s handler.

In this thesis the terms suggested by the Professional Association of Therapeutic Horsemanship International [PATH Intl.] (2018) will be used to avoid confusion.

Equine-assisted interventions is an umbrella term for a broad spectre of interventions with horses (De Santis et al., 2017; Lac, 2017), as is illustrated in Figure 4. Examples for such interventions are

hippotherapy, a therapeutic method with reasonable support in research (Latella & Abrams, 2015) or equine-assisted psychotherapy, a method that is gaining in positive attention and support from research. Equine-assisted psychotherapy is a treatment method implemented in hospitals both in Norway and Austria (ABUP, 2014; e-motion,

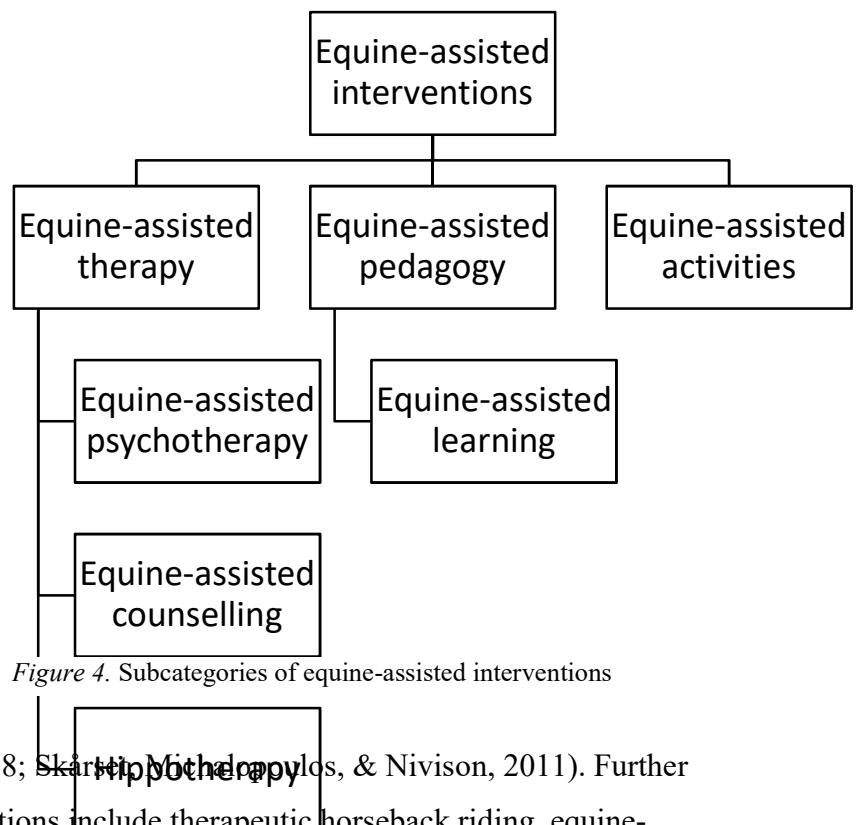


Figure 4. Subcategories of equine-assisted interventions

2018; Modum Bad, 2015; SALK, 2018; Skårup, Michler, & Nivison, 2011). Further subgroups of equine-assisted interventions include therapeutic horseback riding, equine-assisted learning, equine-assisted voltige and equine-assisted activities.

These different forms of equine-assisted interventions can have varying relevance, depending on the challenges faced by an individual. A general distinction is that interventions including the word “therapy”, such as equine-assisted psychotherapy or hippotherapy have to be conducted by medical professionals. Furthermore, therapeutic interventions need to have a set goal for the intervention. Hippotherapy is commonly called ‘ridefysioterapi’ in Norway (Norsk fysioterapeutforbund, 2018), whilst the term ‘Hippotherapie’ is common in Austria (Österreichisches Kuratorium für Therapeutisches Reiten, 2018). Hippotherapy focuses on physical therapy with help of horses, and refers to “how occupational therapy, physical therapy, and speech-language pathology professionals use evidence-based practice and

clinical reasoning in the purposeful manipulation of equine movement to engage sensory, neuromotor, and cognitive systems to achieve functional outcomes.” (American Hippotherapy Association [AHA], 2016). For psychiatric diagnoses, equine-assisted psychotherapy is usually the logical intervention of choice. This is consistent with the fact that a psychologist or someone with education within mental health conducts equine-assisted psychotherapy. A pedagogue or someone with education within pedagogy, for example, conducts EAL. Forms of equine-assisted interventions that are called “equine-assisted activities” usually do not require the person conducting the intervention to have any specific kind of education and can therefore be seen as a leisure-time activity without a specific goal that stands in contrast to therapeutic or pedagogic programmes (PATH Intl., 2018).

One of the more recent subgroups of equine-assisted interventions is EAL, which is part of the equine-assisted pedagogy subgroup, a subgroup of equine-assisted interventions (Adams et al., 2015; Hemingway et al., 2015; Ho et al., 2017; Pendry, Carr, et al., 2014; Pendry & Roeter, 2013), and was developed from equine-assisted psychotherapy (Garcia, 2010). It is used to help and support mostly children or adolescents who struggle with different aspects of their lives (Adams et al., 2015; Hemingway et al., 2015; Ho et al., 2017; Pendry, Carr, et al., 2014; Pendry & Roeter, 2013), but also gets increasing responses from the sector of leadership development (Kelly, 2014; Stock & Kolb, 2016). EAL is a currently unregulated field, but several organisations offer frameworks and guidelines for professional standards (Burgon, Gammage, & Hebden, 2017; CanTRA, 2015; EAGALA, 2010; EAHAE, 2018; PATH Intl., 2018).

In the fields of animal-assisted interventions in general, as well as equine-assisted interventions in particular, a lack of generally accepted and empirically supported theoretical framework to explain the potentially therapeutic effect of human-animal interventions is a fact (Carlsson, 2016; Kruger & Serpell, 2006).

2.1.3 History

Horses have been part of people’s lives for many centuries, and humans are drawn to horses (Frewin & Gardiner, 2005; Kendall et al., 2014; Lac, 2017; VanDierendonck & Goodwin, 2005). Peoples like the Celts, Greek and many more have written about horses’ healing qualities and used their therapeutic value (Brachthäuser, 2012; Granados & Agís, 2011;

Latella & Abrams, 2015). Peoples' attraction to horses is still apparent nowadays. In modern literature, for instance, well-known books about strong, beautiful and heroic horses can be found like *Black Beauty* by Anna Sewell, *My Friend Flicka* by Mary O'Hara, or *Fury* by Albert G. Miller (Frewin & Gardiner, 2005; Lac, 2017). By the nineteenth century, animals served a socialising function for children and mentally ill people, and animals were widespread in institutional care (Serpell, 2015).

Before the 1960s, animals were not formally documented as part of a treatment plan (Burgon et al., 2017), but equine-assisted interventions have become more popular in many European countries since the 1960s, as well as in Canada and the USA (Kendall et al., 2014; Latella & Abrams, 2015). This is also reflected in the many organisations founded to establish common rules and guidelines, as well as for creating an overview of the issue. The three biggest organisations worldwide are the US-based organisation 'Professional Association of Therapeutic Horsemanship International' [PATH Intl.] (2018), the international organisation 'Equine Assisted Growth and Learning Association' [EAGALA] (2010), and the Canadian organisation 'Canadian Therapeutic Riding Organisation' [CanTRA] (2015).

It is apparent that the research field of equine-assisted interventions in general is a rather new one that has become more popular recently (De Santis et al., 2017), and a lot of research has been conducted during the last years (Lac, 2017). However, the relatively new area of research in EAL is currently based on mainly anecdotal evidence to support its effectiveness, but little systematic investigation has been done (Anestis et al., 2014). Research in this field is difficult to conduct due to small programme sizes, which lead to small sample sizes, and as a consequence difficulties in generalising findings (Garcia, 2010).

2.1.4 Effectiveness

Several different studies document the various effects of equine-assisted interventions in general. Among them are an increase in relationship skills (All, Loving, & Crane, 1999), increased motivation to participate in therapy (Fine et al., 2015; Kern-Godal, Arnevik, Walderhaug, & Ravndal, 2015). Other studies found effects such as an increase in positive behaviour and a decrease in negative behaviour (Cantin & Marshall-Lucette, 2011). The decrease in negative ("undesirable") behaviour was confirmed by Wilson, Buultjens, Monfries, & Karimi (2017). Hemingway et al. (2015) report increased confidence in the

participants of their study, a result also found by Wilson et al. (2017) who in addition reported an increase in self-esteem and assertiveness. The increase in self-esteem is contradicted by Holmes, Goodwin, Redhead and Goymour (2012) and Ewing et al. (2007), who did not find any changes in self-esteem.

Another study found a significant improvement in scores on the Children's Global Assessment of Functioning (GAF) in children with a history of abuse and neglect (Schultz, Remick-Barlow, & Robbins, 2007), and Klontz, Bivens, Leinart & Klontz (2007) and Boshoff, Grobler & Nienaber (2015) report enhanced psychological well-being in the participants of the respective studies. Holmes et al. (2012) reported a decrease in anxiety, and Frederick et al. (2015) reported increased levels of hope and decreased levels of depression in at-risk adolescents, whereas Ewing et al. (2007) did not find any decrease in feelings of depression. Trends towards beneficial effects on balance and gross motor functioning are reported by Cuypers, De Ridder, & Strandheim (2011) and Stergiou et al. (2017). Hauge, Kvaalem, Pedersen & Braastad (2014) report a tendency for increased mastery, a necessary factor in the development of self-efficacy.

For children with a diagnosis on the autism spectre, improved social behaviour and communication (Bass, Duchowny, & Llabre, 2009) as well as improved self-regulation (Gabriels et al., 2012) were reported.

According to Carlsson (2016), studies which do not find positive effects exist, and results found are seldom significant. She points to the key aspects of self-efficacy or self-worth as were researched by Ewing et al. (2007), Hauge et al. (2014) or Holmes et al. (2012).

Bachi (2012) confirms that existing knowledge in the field is not sufficient and most research is weakened by methodological problems that negatively affect the validity of the research.

According to Carlsson (2016) a discrepancy between qualitative and quantitative studies is visible, where qualitative studies tend to show bigger effects. According to the review article by Carlsson (2016), the complexity of the intervention makes it challenging to evaluate its efficacy. The latter writes, "Which role do the stable, horses, preparation of horses, professionals, therapeutic alliance, and attachment play in these interventions?" (Carlsson, 2016, p. 19). These questions are relevant and have not been sufficiently answered, which indicates that further research is needed.

Equine welfare

When working with equines in different forms of equine-assisted interventions, it is crucial to keep the horse's well-being in mind. It is the handler's duty to ensure that the horse's well-being is taken care of. This is important not only for the sake of the horse, but also to keep possible risks as low as possible and awareness for potential safety issues for client, horse and handler (Chandler, 2017; Lac, 2017). As described in VanDierendonck and Goodwin (2005) the facilitation of social contact between horses is crucial for a positive development of social skills in the horse. This can be achieved by offering horses the chance to interact with other horses in a herd setting that allows for natural social processes within the herd.

It is crucial that the horse's basic needs are covered so the horse has excess energy to work. Horses that show signs of stress or discomfort when working can pose a risk factor in equine-assisted interventions and should be removed from a given situation immediately. Another issue is that not every horse is suitable for work in equine-assisted interventions. Equines chosen to work with humans in equine-assisted interventions need for instance to like people, seek contact with humans, be responsive to stimuli they get from their human counterpart and have a balanced temper. These are the basic characteristics of a horse fit for this job (Chandler, 2017; Lac, 2017). In addition, the handler has to be able to interpret and understand when the animal experiences fatigue, stress, distress, discomfort or a lack of interest in participating in equine-assisted interventions (Chandler, 2017).

Little research has been done on how equine-assisted interventions impact the horse's health (Gehrke, Baldwin, & Schiltz, 2011). Studies looking at a physical impact of equine-assisted interventions on the horse show no negative influence of equine-assisted interventions on equine stress levels (Gehrke et al., 2011; McKinney, Mueller, & Frank, 2015). Lynch et al. (1974) report a reduced heart rate in horses who were petted by a human. However, these studies only examined stress levels and heart rate, while other health issues were not considered. This shows that more research is needed.

2.1.5 Specific value of the horse

Horses are prey animals, which makes them extremely sensitive to stimuli in their surroundings. This sensitivity was, and to a certain degree still is, necessary for horses to detect possible threats to their lives, an ability critical for their survival. In interventions with

horses, this ability enables them to detect minimal stimuli from clients, which are difficult for humans to sense. The ability to detect subtle or hidden expressions of feelings and intentions is added to by the fact that horses mainly communicate through body language (Chandler, 2017; Latella & Abrams, 2015), which can be seen as a reason for horses' sensitivity towards non-verbal signals and cues. When interacting with humans, this can be particularly relevant for clients who struggle with expressing their feelings and intentions, since the horses can pick up on even the most subtle expressions from the client. Horses' ability to read and respond to subtle displays of emotions in humans is an essential aspect of equine-assisted interventions. In addition to detecting small variations in body language, horses give an immediate response to the client's actions (Frewin & Gardiner, 2005; Latella & Abrams, 2015; Porter-Wenzlaff, 2007; Quiroz Rothe, Jiménez Vega, Mazo Torres, Campos Soler, & Molina, 2005).

Many people like horses but seldom have the chance to interact with them. This can act as a motivating factor for participation in equine-assisted interventions. Horses are well-suited for animal-assisted interventions due to their ability to perceive, evaluate and respond to social behaviours. Horses are capable of communication and interaction with humans, as they have highly developed herd relationships and communication skills. Their repertoire of vocal, facial and bodily expressions make them good social communicators (Chandler, 2017). Another reason horses are well-suited for interventions that intend to promote self-awareness is that, in contrast to other animal-assisted interventions, horses are large animals the client has to engage with (Latella & Abrams, 2015). Due to their size, being able to control and work with a horse boosts self-confidence in most people (Chandler, 2017). When considering the risk of interacting with a large and strong animal, it is relevant to mention that horses are prey animals and that their first reaction to danger is to flee rather than attack. This is an important characteristic for animals used in interventions with humans (Chandler, 2017; Frewin & Gardiner, 2005).

Furthermore, it is crucial to mention that horses are not prejudiced or biased when approaching a relationship with a client. They do not have predetermined thoughts on how the relationship is supposed to develop. In connection with that, they do not have social indicators of status or equity, which enables them to give direct and honest feedback to whoever they communicate with (Gehrke, 2009). Along with that characteristic, it is relevant to mention that horses are considerate and sensitive, as can be seen in their considerate behaviour when

confronted with a struggling individual. Horses usually do not step on an individual lying on the ground, and most horses will intuitively come to a halt if their rider loses their balance or is about to fall off (Steen, 2002).

2.2 Equine-assisted Learning

EAL is a subgroup of equine-assisted interventions that targets learning and self-discovery to promote personal development. PATH Intl. (2018) defines EAL as “an experiential learning approach that promotes the development of life skills for educational, professional and personal goals through equine activities”. According to PATH Intl. (2018) this kind of intervention with horses offers opportunities to teach life skills such as trust, respect, honesty and communication. EAL is conducted by professionals like mental health professionals, educators or otherwise appropriately trained personnel. EAL aims at facilitating increased self-awareness, self-improvement, and social interaction to promote personal growth (Latella & Abrams, 2015). EAL makes use of the intervention’s therapeutic benefits of being with horses to promote cognitive, physical and social challenges a client might have (Lac, 2017).

EAL has developed from equine-assisted psychotherapy (EAP) and focuses on relational expression and learning (Garcia, 2010). It is expanding to different areas of development and gaining more and more recognition in the field of personal growth and leadership development (Gehrke, 2009). Furthermore it is a very promising approach to promote child and adolescent social and behavioural issues, even though more research on the intervention is needed (Kendall et al., 2015). EAL encourages exploration of feelings and behaviours, which in turn can lead to personal growth and development, as well as facilitating promoting life and coping skills in clients. This alternative way of learning can improve confidence in clients by offering opportunities for mastery experiences (Latella & Abrams, 2015).

Common issues that arise during EAL are connected to emotional and behavioural issues which are often related to dynamic pairs such as fear-courage, dominance-partnership, empowerment-disempowerment, and clarity-ambiguity in communication (Garcia, 2010).

2.2.1 Aspects of EAL

A WHO (2012) report shows that approximately one in five children have social, emotional and behavioural needs to master their everyday life at school. Sagers & Strachan (2016) show that a lack of social-emotional competence can eventually lead to a decrease in connection with school and poor academic performance as a result of the former.

Humans and animals share basic and universal physiological structures and mechanisms that underlie social behaviour in both humans and animals. They share functions of behaviour, physiology and brain considered relevant in social contexts, which can lead to interspecies social relationships that impact social behaviour and development in human beings (Beetz et al., 2010).

EAL can be a suitable intervention to encourage development of and strengthening social and emotional skills. It is a common goal of EAL to improve social skills and promote self-development, which in addition can be supported by improvements of self-esteem, attention, the ability to express feelings or the ability to trust among others (Chandler, 2017) and relationship skills (Træen, Moan, & Rosenvinge, 2012).

Critical aspects of EAL were chosen to be highlighted in this thesis. These aspects are highly relevant both for EAL and the development of social competence. The several

subcategories of EAL were categorised into four main categories, which are communication, awareness of self and surroundings, self-confidence and impulse control (see Figure 5).

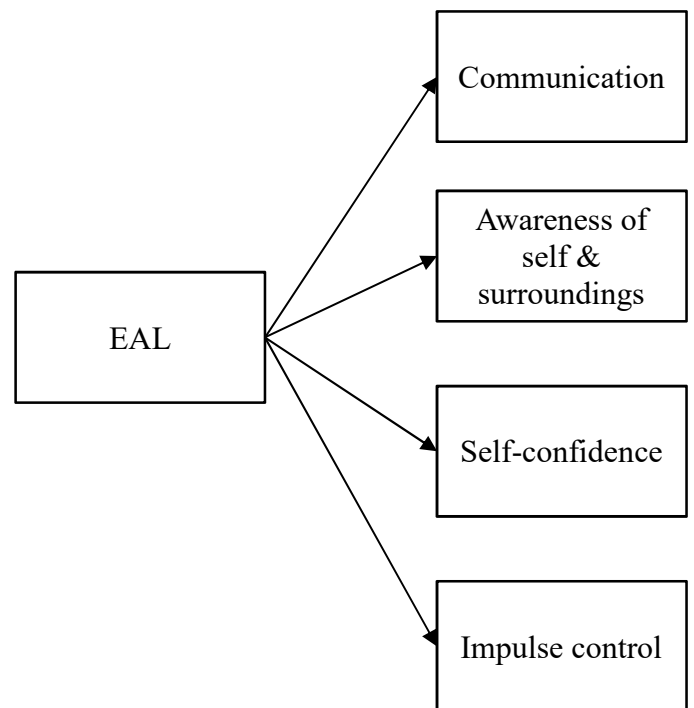


Figure 5. Subcategories of EAL

Communication

Depicted in Figure 6, communication is shown as a category consisting of two subcategories, feedback and interest in others. Each of these subcategories can be split into two different

aspects occurring during EAL, namely mirroring and consequences of one’s own actions, and contact initiation and cooperation. These categories and aspects are described in the following.

As mentioned before, horses communicate mainly through body language (Garcia, 2010; Maziere & Gunnlaugson, 2015; PATH Intl., 2018; Schwarzkopf, 2013; Zeller, 2001), which drives clients to learn to interpret subtle cues given by the horse. Understanding a horse’s body language can offer opportunities to learn to better understand how non-verbal communication might impact a conversation with other human beings (PATH Intl., 2018)

Furthermore, clients practice paying attention to the atmosphere around them, and reading the body language of their counterpart (the horse). During EAL the goal can be to

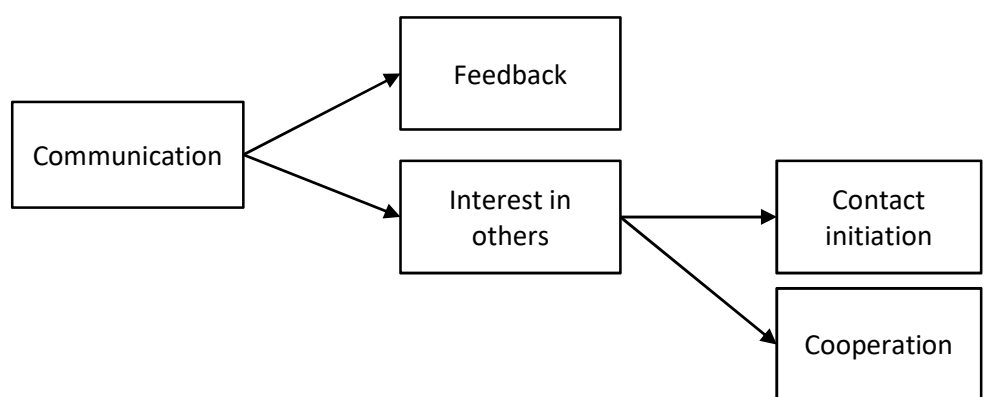


Figure 6. Subgroups of EAL - communication

transfer these new skills to different (social) situations. Interactions with equines can serve as training situations for a client to practice interactions with others (Saggers & Strachan, 2016).

EAL is discussed as being a useful means for soft skills training. Among those soft skills are empathy and communication, two skills which are closely connected ("Satisfying the workers who appreciate galloping change," 2016). Horses are very aware of both subtle and overt social cues in intentions as well as in actions. They have a huge repertoire of expressions both facial and, especially, bodily which makes them capable of giving hints and cues humans can pick up on during interaction with the horse (Chandler, 2017). As a prey animal, horses excel at reading body language and communicating non-verbally by responding to a human’s energetic field (Gehrke, 2009). An advantage in communication with horses is that they additionally react to human non-verbal behaviour. It is irrelevant whether the behaviour is displayed consciously or subconsciously. In their response, horses serve as a mirror through which clients can gain insights into their own behaviour (Maziere & Gunnlaugson, 2015; Waite & Bourke, 2013). It can be an advantage for some clients to not have to communicate their inner feelings and needs verbally, but to be understood without words. This can be a

relief for vulnerable clients with the experience and fear of being judged by others (Steen, 2002; Waite & Bourke, 2013). Furthermore, non-verbal communication with a horse seems to function at an intuitive level of body language (Garcia, 2010). This was also reported by Zeller (2001) who attributes this to the less complex motives in animals' communication, and can be substantiated by Schwarzkopf (2013). The latter (Schwarzkopf, 2013) mentions that through the development of logical thinking and more advanced language skills, peoples' ability to sense and perceive body language decreases. However, awareness of different non-verbal signals in communication is important due to their crucial role in interpersonal communication.

A further aspect concerning communication is that horses do not have a frontal cortex. This results in them not being able to separate feelings from behaviour, which results in horses being incapable of lying, and making them honest in their communication with a client. Their honesty is always connected to the present situation since horses only work within the here-and-now (Gehrke, 2009).

A different issue connected to communication is the horse's ability to 'mirror' a client. Mirroring is an important process in nonverbal communication that relates to the horse's ability to sense emotional energy of the individuals around them and respond in a synchronous manner. The horse responds by giving the client feedback on his/her inner mental or emotional state (Garcia, 2010), and confronts the client with his/her feelings (Bachi et al., 2012). Through mirroring, the horse gives immediate and direct feedback on the client's emotions, intentions, attitude toward the horse and intervention, as well as the client's mental state (Carlsson, Nilsson Ranta, & Traeen, 2014; Chandler, 2017; Frewin & Gardiner, 2005). This mirroring gives the client a chance to see a 'picture' of how they feel. This can be especially relevant for clients who struggle with self-awareness and verbalising their feelings and thoughts. Often this mirrored picture of a client's inner state can be a starting point for working on the client's feelings and mental state (Carlsson et al., 2014). Furthermore, it is often easier for the client to accept the 'picture' of their own mental state and feelings if the picture is mirrored from a horse ("Satisfying the workers who appreciate galloping change," 2016). In this respect, it is relevant to mention that many clients feel that they cannot lie to a horse because it will uncover the lie and see the client's real state of mind. This can have a relieving effect for many clients. This can be seen as directly connected to the fact that horses do not judge the client for who he/she is since the horse's only concern are the client's

intentions directed towards it. Equines enter relationships without prejudice (Brachthäuser, 2012; "Satisfying the workers who appreciate galloping change," 2016; Steen, 2002; Waite & Bourke, 2013; Zeller, 2001), an aspect that can prove particularly helpful for clients who are experiencing being judged in social situations. Usually clients understand quickly that a horse's response to the client is only attributed to their behaviour, and not towards the client as a person. This can help clients understand in what ways their behaviour influences their surroundings (Steen, 2002). This can be helpful for clients to discover their own ability to sense their proximate environment and communicate with others within their close surroundings. Most humans have been socialised to censor visible responses to emotions, which makes them able to 'fake' a feeling they do not actually feel, which in turn makes it difficult and confusing for their fellow human beings to 'read' the person's feelings (Carlsson et al., 2015; Frewin & Gardiner, 2005; Gehrke, 2009). The experience of unconditional acceptance from a horse can therefore provide a chance for conversations about issues the client did not want to talk about out of fear of being judged (Carlsson et al., 2014; Gehrke, 2009; Steen, 2002).

When mirroring the client's actions and behaviour, a horse immediately reacts to the client's actions. This immediate reaction offers a possibility for the client to receive feedback on his/her behaviour. Humans usually try to adapt their behaviour and response to someone else according to cultural norms and situational demands, which stands in contrast to the horse which gives unmodified feedback on the client's behaviour (Carlsson et al., 2014; Chandler, 2017; Frewin & Gardiner, 2005). By receiving direct feedback the client gets the chance to understand the connection between his/her behaviour and the implications for social interactions (Waite & Bourke, 2013). In addition to not judging clients for anything but their behaviour towards the horse, it should be mentioned that horses cannot lie and therefore will give a truthful reaction in any situation. This is explained by the horse's less developed frontal cortex (as compared to humans' frontal cortex) (Gehrke, 2009).

The response the client gets through mirroring by the horse can be particularly relevant for people who struggle in social situations. The underlying reason is that, as mentioned earlier, the horse's response is neither judging nor directed against the client as a person. On the contrary, the horse's response is only directed towards the behaviour and feelings the client shows. Horses react differently compared to humans since the former usually cannot pretend,

take revenge or punish. A further important aspect is that horses' behaviour is constant and predictable, something rarely applicable to humans (Gäng cited by Steen, 2002).

In addition to mirroring, spending time at a stable can be a facilitator for contact to other people. In such situations the horse can work as a buffer for closeness and contact (Schmidt, 2008), as well as a common interest that can prompt social interaction (Træen et al., 2012). Spending time in small groups, with pedagogues who facilitate a structured activity and a positive learning environment can be of support for positive peer interactions (Pendry & Roeter, 2013). In addition, EAL is often conducted in small groups, where participants have to team up with horses, and/or with each other to perform different tasks. This can help clients to practice and improve their cooperation and teamwork skills (Perkins, 2018). However, an improvement in cooperation can also develop through successful collaboration between the client and the horse (Yorke et al., 2008). Garcia (2010) mentions that many clients change their behaviour in relationships from dominance to collaboration with each other, which is strongly influenced by communication. During EAL the client can experience positive relationships with the horse, which accordingly can be helpful for the client to positively reframe relationships.

Interest in others is also reflected in the Biophilia hypothesis, which ascribes humans a deep interest in animals in general. This is put down to the fact that attention to animals was beneficial for human survival (Fine et al., 2015). In addition, Bradshaw & Paul (2010) explain that empathy towards animals can be seen as a more general reflection of a human's capacity to take care of human infants, and Taylor & Signal (2005) see it as a predictor of human-human empathy.

Awareness of self and surroundings

As the second category of EAL, awareness of self and surroundings consists of six sub-categories (see Figure 7), which are emotion, awareness of personal limits, body perception, perception of others' needs, and transfer of experience to new situation.

One reason why EAL might influence emotions and emotional skills in clients is that horses can sense very subtle emotional cues a client might (subconsciously) give, and will respond to them immediately (Frewin & Gardiner, 2005; Latella & Abrams, 2015; Porter-Wenzlaff, 2007; Quiroz Rothe et al., 2005). The horse reflects the client's emotions, which can be an

opportunity for the client to "see" his/her own emotions, and in turn can be helpful for the client to understand his/her own feelings (Carlsson et al., 2014; Waite & Bourke, 2013). The latter can be seen as an explanation for Bachi et al. (2012) ascribing the presence of the horse to the ability to evoke feelings, thoughts and behaviour in clients.

As mentioned in 2.1.5 "Specific value of the horse", horses are highly sensitive to stimuli from their surroundings. This is particularly relevant for the client, if he/she is inconsistent or unsure of his/her own feelings and intentions. An example given by Carlsson (2016) is that a horse becomes confused and agitated when the client shows incongruence in his/her verbal and non-verbal cues (Vidrine, Owen-Smith, & Faulkner, 2002). Through the horse mirroring the client's feelings, the client gets an immediate response to his/her behaviour and actions, and direct feedback on how small variations in body language can affect interpersonal (non-verbal) communication (Frewin & Gardiner, 2005; Latella & Abrams, 2015; Porter-Wenzlaff, 2007; Quiroz Rothe et al., 2005).

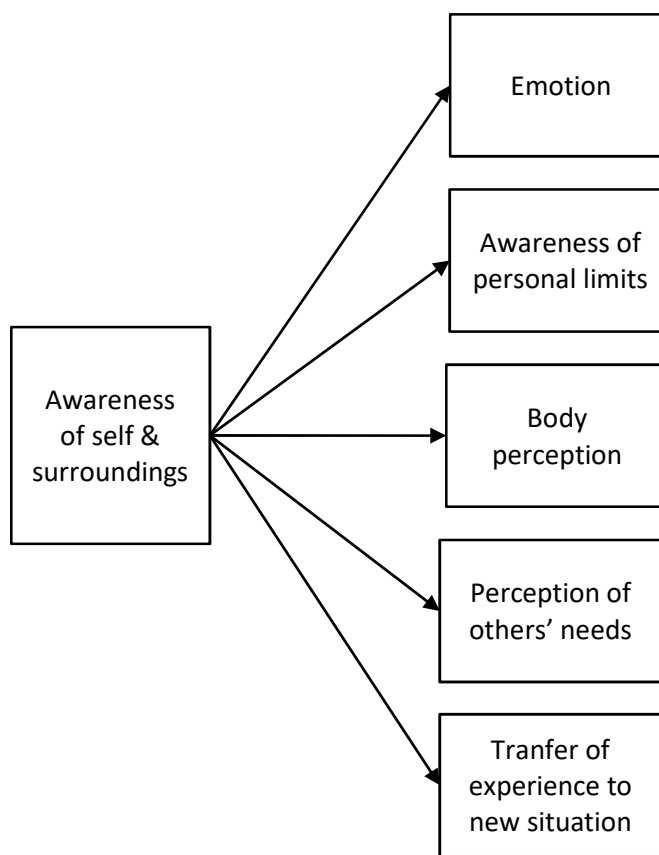


Figure 7. Subcategories of EAL - awareness of self and surroundings

A different kind of bodily perception when working with horses can arise when the client rides the horse. According to Steen (2002), horses are very considerate animals that will stop moving if they feel their rider losing his/her balance. This can help clients to get an immediate reaction to their body movements.

Perception of others' needs can be understood as being aware of what another person (or horse) might need, or what a possible reason for their behaviour might be in a given situation. This was examined in a study by Ho et al. (2017)

One person to mention the transferability of experiences with horses to other situations is Garcia (2010). She suggests that the equine-human relationship may help to reframe the client's individual relationships to him/herself and others in a positive way, which can be seen as a transfer of one experience to a new situation. All, Loving & Crane (1999) even consider it a goal of the client-horse relationship to create experiences that have a positive value in new situations for the client. Another ability that is of value for clients when it is transferred to new situations is that of showing and communicating one's emotions and intentions. Through interacting with horses, the client learns to communicate his/her intentions precisely and clearly. This is usually learned quickly due to the horse's immediate and non-judgemental feedback. Clients learn to show their emotions and intentions in order to make the horse understand what it is supposed to do. This ability can be beneficial in communication in general, as well as when trying to communicate personal feelings or wishes to others (Frewin & Gardiner, 2005; Træen et al., 2012).

Self-confidence

Category three, self-confidence, comprises two sub-categories, namely mastery and self-worth, as is illustrated in Figure 8.

Interacting with big animals such as horses can offer many possibilities for mastery experiences and improve self-confidence in clients (Chandler, 2017). Through the challenges which a client has to overcome to bond with a big animal such as a horse, the client might experience a development

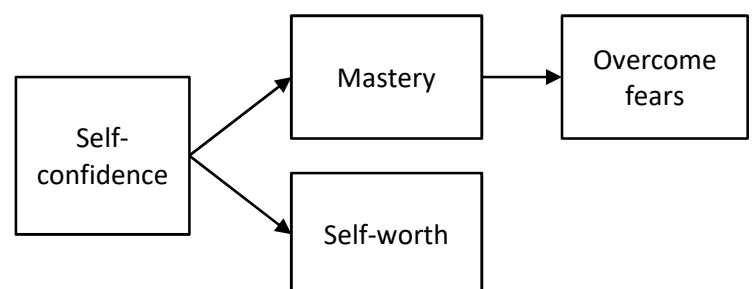


Figure 8. Subcategories of EAL - self-confidence

of skills, mastery and increased self-esteem through overcoming challenges and facing fears (Yorke et al., 2008).

Horses cannot lie, and do not judge a client for who he/she is. The only concern the horse will have towards a client is that of his/her current intentions towards the horse. This unconditional acceptance from the horse can be of great importance for some clients (Brachthäuser, 2012; Carlsson et al., 2014; Gehrke, 2009; "Satisfying the workers who appreciate galloping change," 2016; Steen, 2002; Zeller, 2001).

Impulse control

The last of the four categories is the category of impulse control, with two sub-categories that are respecting borders and concentration (see Figure 9).

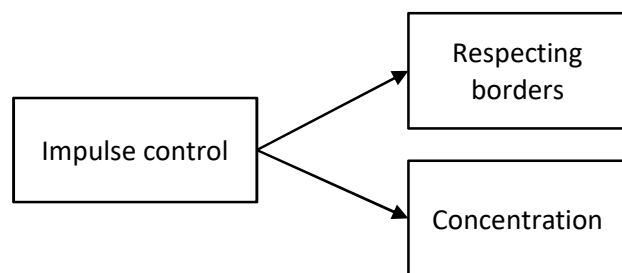


Figure 9. Subgroups of EAL - impulse control

Interaction with horses can help clients to respect borders in two ways. On the one hand, clients will receive direct and immediate feedback on their actions and behaviour. This feedback is only attributed to the client's action or behaviour, but never to the client as a person. For many clients, this can make it easier to accept feedback or possible rebuke from a horse than from another person (Brachthäuser, 2012; "Satisfying the workers who appreciate galloping change," 2016; Zeller, 2001).

Being together with a large animal such as a horse requires concentration and focus on what is happening in the here-and-now. The client needs to pay attention and concentrate on the current situation, be aware of his/her own feelings and learn to handle them (Træen et al., 2012). Control over body language and energy are crucial skills, as horses react sensitively to aggression and pressure (Carlsson, 2016; Hemingway et al., 2015). In this situation, the horse's ability to mirror humans' emotions and feelings can be a valuable experience for clients (Frewin & Gardiner, 2005; Quiroz Rothe et al., 2005).

2.3 Social competence

Social competence is a term that is not clearly defined (Schneider, 2016). There are many varying concepts attributing different competencies and dimensions to each concept (Rose-Krasnor, 1997). However, in most definitions, social competence is seen as a positive and resource oriented term that comprises different aspects (Ogden & Sørli, 2001) which secure healthy functioning across the life span (Stump, Ratliff, Wu, & Hawley, 2010). Differences in the definitions can be seen in which traits and goals of social competence are emphasised (Ogden, 2015). One can distinguish between two different focuses on social competences, the clinical psychological focus and the developmental psychological focus. Definitions with a clinical psychological focus emphasise an individual's personal interests in social competences, whilst definitions with a developmental psychological focus stress adaptive aspects and an individual's ability to integrate themselves into society (Kanning & Horenburg, 2014).

Defining social competence

When defining social competence, a distinction between knowledge, abilities and skills is usually made. Knowledge entails the cognitive aspects of social competence, meaning general rules and norms of human interaction. Ability describes basic competences, and skills refers to concrete, learned competencies (Lang, 2007).

Ogden (2015) argues that social competence consists of personal competences/abilities and prerequisites that make it possible to succeed in social settings. He defines social competence as follows: “[...] integrating thoughts, feelings and behaviour to develop knowledge, skills and attitudes that enable and maintain social relations [...]”. According to Ogden (2015) social competence leads to a realistic perception of one's own competence, social mastery, social acceptance and personal friendship. Ogden & Sørli (2001) emphasise that social competence is first and foremost defined by personal skills, such as social perception and taking of perspectives and the ability to use one's skills in social situations. They claim that these two personal skills are seen as a precondition for being socially competent.

Kanning & Horenburg (2014) define social competence as the “entity of a person's knowledge, capabilities and skills which facilitate[s] [...] one's social behavior“ (Kanning &

Horenburg, 2014, p. 143). Their definition is similar to one by Rose-Krasnor (1997, p. 111) who sees social competence as “effectiveness in social interaction”. A more detailed version of the definition by Rubin and Rose-Krasnor (cited by Rose-Krasnor, 1997, p. 113) reads as follows: “the ability to achieve personal goals in social interaction while simultaneously maintaining positive relationships with others over time and across settings”. This definition focuses more on an individual’s advantages, and highlights the aspects of lasting relations to others by including a variable for time and place.

The definition used by Ogden (2015) does not include the achievement of personal goals, as is included by Rose-Krasnor (1997). Since EAL not only focuses on promoting social competence and everyday skills, but also aims at a client’s personal development (PATH Intl., 2018), this thesis will build on Rose-Krasnor’s (1997) definition of social competence, which includes the achievement of personal goals as part of social competence. Moreover, the author considers Kanning & Horenburg’s (2014) description of social competence as relevant, and the individual’s understanding of his/her knowledge, capabilities and skills, as vital aspects of social competence.

Development of social competence

Social competence develops in different contexts, and is a construct commonly referred to as cognitive, emotional-motivational, and behavioural aspects of a person’s development (Arnold & Lindner-Müller, 2012). Garbarino (1985) describes the development of social competence in childhood as a product of physical and environmental factors. Furthermore, he sees it as a factor that influences the future development of competence in adolescence. In his opinion, competence is developed through interplay of personal and environmental factors. This is affirmed by Rubin et al. (1995) who specify that social competence is influenced by both dispositional and biological characteristics, parenting experiences the child has had, the quality of the child’s relationships, as well as culture, stress and social support for the child and its family. Ogden (2015) writes that social competence develops through sensitivity, initiative and positive reciprocity. In accordance with Ogden (2015), Garrison (1965) too points to the importance of emotional development, physiological changes, intellectual activities, and the concept of the self as influencing factors of social development in adolescents. Garrison (1965) mentions the pronounced changes in social behaviour that occur, especially in the early, adolescent years. He refers to studies that show how peer interaction

influences the development of social behaviour in young people, and goes as far as claiming that social interaction is the only way of learning to understand and interact with others (Garrison, 1965). The importance of peer relations is highlighted in Stump et al. (2010) too, who state that healthy social development is based on the child's sense of relatedness, competence and autonomy. The changes in social competence that come along with adolescence are described in Nelson, Leibenluft, McClure, and Pine (2005), who describe the social re-orientation that happens in adolescence.

Healthy social development is important since a connection between social competence and childrens' psychological well-being has been found. A lack of social competences can influence aspects such as poor adjustment and peer difficulties, and non-social behaviour is connected to internalising difficulties (Rose-Krasnor, 1997). Moreover, a lack in social skills might contribute to psychological distress, social isolation, reduced self-esteem, and a lower quality of life. In adolescence and adulthood, a lack of social competences might lead to a higher risk of delinquent or criminal behaviour (Beauchamp & Anderson, 2010). Problems with social competence are seen as characteristics of many neurological and developmental difficulties, as well as medical and psychiatric problems (Ogden, 2015). Furthermore, socially competent children have a higher likelihood of having more friends, developing positive relationships with others, and being academically successful (Orpinas & Horne, 2006).

Garbarino (1985) emphasises that social competence has to be seen in the context of what the society in which an individual lives perceives and accepts as socially competent. This claim is also supported by Semrud-Clikeman (2007), who mentions that social competence is understood differently in different cultures.

2.3.1 Aspects of social competence

The broad variety of differing definitions and focuses on aspects of social competence results in various lists of aspects of social competence. Wittmann (2005, p. 58) describes how competency catalogues, no matter how sophisticated and systemised they might be, show no anthropological constants for socially competent behaviour. At best they show an image of the abilities and skills that are deemed adequate and useful in specific social fields of action. For the purpose of this thesis, a list of aspects of social competence was created. The aspects

in this table comprise different competencies implicit in social competence, and are loosely built on the basis of a list of aspects by Kanning (2009).

The four main categories, illustrated in Table 1, are communication, awareness of self and surroundings, self-confidence and impulse control. The integration of different aspects of the categories can be understood as follows:

Table 1.
Different Aspects of Categories of Social Competence

Communication	Awareness of self and surroundings	Self-confidence	Impulse control
Feedback	Emotion	Mastery	Respect borders
Interest in others	Awareness of personal limits Body perception Perception of other's needs Transfer experience to new situation	Self-worth	Concentration

Communication

As the basis of thought, intentions and information, communication is key for social relationships (Beauchamp & Anderson, 2010). As a central aspect of social interaction, being able to adeptly navigate and act situationally has implications for good social competence (McCabe & Meller, 2004). Knowledge of basic communication processes in social situations and social norms are crucial elements for understanding and proficiently demonstrating socially competent behaviour.

Communication is considered a part of social competence and understanding and respecting social communication norms, such as turn-taking, pausing, interpretation of verbal and non-verbal cues or adjustment of conversation style are crucial factors for the development of social competence (Rinaldi, 2003). Verbal communication skills are related to happiness and

productivity in students, whereas a lack of verbal communication skills is a risk factor for aggression (Orpinas & Horne, 2006).

To act socially competently, a person has to master verbal and non-verbal language (Ogden, 2015). Children who do not communicate well are at risk of not being accepted into peer groups (Longoria, Page, Hubbs-Tait, & Kennison, 2009), as language plays a central role in interpersonal communication (McCabe & Meller, 2004). In agreement with that, Semrud-Clikeman (2007) says that the ability of showing comprehension through non-verbal skills has been linked to popularity and peer acceptance. This fact is also stated in Riggio (1992) who writes that non-verbal communication skills, as well as communication skills in general determine the quality and quantity of interpersonal relationships. Philippot, Feldman & Coats (1999) add that non-verbal cues have to be understood in relation to their context. In addition, Feldman, White & Lobato (1982) claim that it is implicit in the concept of social competence that it consists of a set of behavioural and cognitive skills, which includes both verbal and non-verbal behaviour. They go as far as saying that non-verbal communication can be more influential than verbal expressions when communicating affective states, and consider non-verbal behaviour as a specific skill to be employed during social interaction. Also Beauchamp and Anderson (2010) mention expressive as well as receptive language skills as crucial aspects in social interactions. In interaction with horses, non-verbal communication represents an even more important part of communication as horses mainly communicate non-verbally (Garcia, 2010; PATH Intl., 2018; Schwarzkopf, 2013; Zeller, 2001).

Being able to communicate effectively with others opens up possibilities for active contact initiation with humans or animals, making friends and taking initiative (Brachthäuser, 2012). This is connected to prosocial behaviour, which concerns a person's generally positive attitude towards other people (Brachthäuser, 2012). Prosocial behaviour has been theorised to develop through peer interactions. Increased social interaction and contact with others offer many situations to practice behaviours of sharing and reciprocity of relationships, which are understood as aspects of prosocial behaviour. Well-accepted adolescents have more regular opportunities for positive interactions with peers, which leads to repeated possibilities for development and improvement of their social competence (Semrud-Clikeman, 2007). This has been investigated by Rabaglietti, Vacirca, and Pakalniskiene (2013), who found that prosocial behaviour was positively associated with various positive characteristics of friendship.

Since social competence is linked to mental and physical health, it is important to master skills which are relevant for social competence (Semrud-Clikeman, 2007).

With regard to EAL, it is important to mention ‘mirroring’, as it can be a useful instrument to reflect a client’s behaviour back to them which can help a client to gain awareness of their behaviour. Mirroring can be seen as a way of giving direct and clear feedback (Brachthäuser, 2012), and is therefore connected to communication. To understand a horse’s mirrored feedback, clients have to learn to understand non-verbal signals, as horses rely on mainly non-verbal cues. Understanding these non-verbal cues is usually learned quickly, as it presents a more primal and intuitive way of communicating (Garcia, 2010; Zeller, 2001).

Awareness of self and surroundings

The attention to self is an important part of experiencing and the client’s awareness of his/her current emotional state, and his/her feelings in the here-and-now (Carlsson et al., 2014; Latella & Abrams, 2015; Træen et al., 2012). Paying attention to self can help in seeking causes for incidents in a person’s surroundings as connected to the person’s behaviour. Awareness of oneself can help with attributing consequences of one’s own behaviour to oneself, and open up for reflection on it (Brachthäuser, 2012). Through awareness of oneself, clients will usually be confronted with their emotions and feelings. The ability to express them in a situationally adequate manner is a crucial part of social competence, and highly relevant in situations of social interaction with others (Semrud-Clikeman, 2007).

In addition to being aware of oneself, it is important to be aware of others too. Being able to detect changes in aspects of facial stimuli is one part of it. This is part of perceiving somebody else’s state of mind, an ability necessary for processes within Theory of Mind (Nelson et al., 2005). An aspect of social competence that is mentioned in several definitions is the ability to take others’ perspectives (Kanning, 2009; Ogden, 2011; Semrud-Clikeman, 2007). It is an essential aspect of social competence to be able to be aware of others’ feelings, and to have an accurate perception of another person (Semrud-Clikeman, 2007). Ogden (2015) even describes it as a milestone in the development of social competence to be able to understand other individuals’ feelings by interpreting their body language. He adds that the development of Theory of Mind can be seen as a second milestone in the development of social competence. Theory of Mind is about an individual’s ability to understand another individual’s frame of mind (Ogden, 2015).

Language plays a central role in the ability to understand the world from someone else's point of view. Interactions and conversations with others help develop a person's social understanding. Additionally, it is not only important to be able to take another person's point of view, but to be able to see his/her own self through the other person's eyes (Semrud-Clikeman, 2007). With regard to the horses in EAL, the adolescent has to see the horse's needs and react to them adequately. Other possibilities for taking perspective might arise when the horse's reflexes as a prey animal become an issue. The client might not necessarily perceive what seems dangerous for a horse as dangerous for him/herself. A possibility for taking perspective as a way of understanding the horse is given in such a situation. (Brachthäuser, 2012). The correct perception of others makes it possible to adapt one's own behaviour to the requirements of a given situation. This can for example be practised in collaboration with a horse. Both parties, the client and the horse, have to try to understand each other's intentions and interact in a way that is beneficial for both parties (Saggers & Strachan, 2016).

Self-confidence

Bandura (1997) explains that the term self-efficacy differs from the term self-confidence. He describes that the term self-efficacy comprises a person's belief in his/her agentive capabilities, whereas the term self-confidence is depicted as nondescript and referring to strength of belief rather than its certainty. As self-confidence is a more commonly known term, the author chose to use the term self-confidence rather than self-efficacy. The detailed differentiation between the terms is not considered to be relevant for this thesis, as this thesis' focus lies more on adolescents' belief in themselves and a positive perception of themselves as a person.

How people perceive themselves is influenced by the person's social competence and for this reason also their social interactions. An individual's self-perception influences their social competence and thereby their experience of self-worth (Semrud-Clikeman, 2007). Laier (2013) considers self-confidence as a vital factor for social competence, and as a necessity for its development.

In addition to its influences on a person's self (Semrud-Clikeman, 2007), social competence has been discussed as an important factor for motivation (Waters & Sroufe, 1983). Schunk and Zimmerman (2012) consider mastery and self-efficacy as sources of motivation. Pajares

(2008) mentions self-efficacy as the basis for motivation, well-being and personal accomplishment, and claims self-efficacy develops mainly through mastery of different situations or tasks. Believing in one's own self-efficacy is necessary for a person's ability to motivate themselves. (Pajares, 2008; Schunk & Zimmerman, 2012). This has already been described by Bandura (1977) who claimed that self-efficacy can be enhanced through mastery experiences. Furthermore, he developed a model, claiming that four main sources form the basis for self-efficacy, among them the especially influential personal mastery experiences. Once self-efficacy is established, it tends to generalise from the situations where an individual experienced personal mastery to other situations. (Bandura, 1977). Mastery experience is a crucial source for a person's self-efficacy beliefs (Pajares, 2008). Mastery experiences held by an adolescent are a main source of self-efficacy information. Efforts to achieve mastery depend on several sources of motivation, ranging from social to personal (Schunk & Zimmerman, 2012).

Impulse control

Emotions are a normal part of human lives, and crucial parts of interpersonal relationships. It is part of social competence to be able to recognise one's own emotions in order to control them (Orpinas & Horne, 2006). Control of one's emotions is necessary to regulate feelings and behaviour (Ogden, 2015) and controlling one's own emotional behaviour is a sign of impulse control, especially in demanding situations (Brachthäuser, 2012). Impulse control is central in order to behave in a goal-oriented way. It is necessary to control the expression of momentary emotions to be able to achieve specific long-term goals. A sign of acting socially competently in conflict situations is seeing and respecting others' rights, as well as willingness to compromise (Brachthäuser, 2012).

Semrud-Clikeman (2007) describes the ability to regulate one's emotions as fundamental in the development of social competence. She mentions the major particularly big importance of being able to control negative emotions and show appropriate behaviour despite challenging emotions. Over-arousal and extreme reactions to negative emotions might increase the risk of social difficulties.

To describe the relevant processes happening during emotional regulation, Semrud-Clikeman (2007) divides it into two types, regulation of emotion and regulation of behaviour respectively. Regulation of emotion is focused on a person's ability to adjust his/her feelings

in a given situation. Behavioural regulations, however, characterises the ability to change one's behaviour in order to regulate behaviour (Semrud-Clikeman, 2007). Ogden (2015), however, uses a definition that adds monitoring and adaption of thinking as essential aspects of emotional regulation.

Control over emotional regulation is important for the development of social competence, as intense emotion and undesirable behaviour impact a child's social relations, and subsequently often result in problems with externalising behaviours and poorer social relationships (Semrud-Clikeman, 2007). As Ogden (2015, p. 231) puts it, impulse control is both a result and an indicator for social competence.

2.3.2 Relevance of social competence in everyday life

Good social skills are important for children since they are connected to popularity among peers, as well as positive regard by teachers and parents. As a result of that, these children usually think well of themselves and have a good quality of life. Stump et al. (2010) state that healthy social development is based on the child's sense of relatedness, competence and autonomy.

According to Rubin et al. (1995) socially competent children grow into adolescents who are not likely to drop out of school, and who rarely have psychological difficulties. Similarly, Feldman et al. (1982) state that poor social relationships in children and adolescents can have a negative influence on adult mental health, for example. Lack of socially skilled behaviour can present an obstacle for normal social relationships, accomplishment of educational goals, and psychological well-being (Rubin et al., 1995). As described by Rubin et al. (1995), socially incompetent children can express their incompetency either by externalising or internalising behaviour. Children prone to externalising reactions are mainly characterised as aggressive and are at risk of externalising disorders and school drop-out. Those with internalising behaviour seem to be at higher risk of internalising difficulties. It has been found that adolescents who struggle socially have lower self-worth and experience more stress in school-related environments (Semrud-Clikeman, 2007, p. 27f). Rubin et al. (1995) add inappropriate reaction by parents to the child's behaviour, as well as difficulty maintaining close friendships as problems connected to low social competence. Moreover, they describe consequences such as peer rejection, school drop-out, psychological disorders in adulthood.

3 Methodology

This chapter should give the reader an overview of the methodological choices and several aspects that might influence the data's trustworthiness. This chapter will give a thorough review of the methodology used in this study and justify the choices that were made. For this thesis, a mixed methods approach has been deemed appropriate. Firstly, the study's research design and methods are described in more general terms. Following that, this study's specifics are described in detail. The trustworthiness of the results is discussed in summary.

3.1 Research design

The study is a case study built upon a cross-sectional design. Cross-sectional designs are mainly used in quantitative research, and refer to data collected at one point in time (Kumar, 2011), as is the case in this study. A case study, however, is a mainly qualitative study design that is often applied when examining an area where little is known yet (Kumar, 2011), as fits for the research area of EAL. According to Kumar (2011) it is an important aspect of a case study to gather data through different methods. In this study, interviews and surveys were the methods of choice. The embedded design is a basic design for a mixed methods approach. Its focus lies on integrating the results from both methods to produce more complete and detailed findings (Bryman, 2015).

3.2 Research method

To collect data for this study, mixed methods were used. As illustrated in Table 2, on the one hand the quantitative method of surveying was applied, and on the other hand the qualitative method of interviewing was utilised. Quantitative data, however, focuses on empirical facts shown in numbers and aims at being as neutral as possible. In addition, quantitative research is a more linear and planned way of doing research than qualitative research (Hug & Poscheschnik, 2012). Qualitative data is characterised by a focus on the study participants' points of view. It is a less rigid and structured approach to gathering data that allows for small adjustments to the situation. Moreover, the collected data is usually seen in the context in

which the research is conducted, which leads to a rich set of data that requires a deeper understanding of the issue in question (Bryman, 2015)

Table 2.
Types of Data in the Study

Method	Type of data	Participants	Number of participants
Interview	Voice recordings/transcripts	Experts working in the field	9
Survey adolescents	Survey data	Participants of EAL	15 adolescent EAL participants
Survey parents	Survey data	Parents of EAL-participants	5 parents of EAL participants

The quantitative data gathered for this study is survey data from an online-administered survey. In combination, the quantitative data from the surveys was gathered to support the qualitative data that was gathered. The qualitative data collected in this thesis is interview data, where voice recordings were transcribed into text. Qualitative interviews are well-suited to generate data on a person’s opinion and perception of a given issue, as is the aim of this study.

The surveys are based on the experts’ perception of the influence of EAL on adolescents. The significance of these perceptions was substantiated with data collected in two different surveys. One survey was given to adolescent participants in the interventions the experts offered, while the other survey was given to the participants’ parents.

The combination of these two different methods was chosen due to several reasons. Primarily, the combination of different methods leads to a broader variety of data and the complementarity of the methods leads to a better balance between advantages and disadvantages of each method. Secondly, the aim was to find the results of the data from one method reflected in the data collected with the other method, to substantiate the information found in the first set of data. The aim of combining these two approaches is to validate the results of each individual approach, an approach called triangulation. In this thesis, methodological and data triangulation is used, meaning that the same issue is investigated with different methods and through different samples. The aim is to balance disadvantages of the respective methods and avoid blind spots (Hug & Poscheschnik, 2012).

3.2.1 Survey

By conducting two surveys on the adolescents' and the parents' perception of the influence of EAL on social competence respectively, data on these two groups' perceptions of the issue could be gathered. Due to collecting data in the form of surveys, it was possible to obtain data from a bigger group of participants than would have been possible with other forms of data collection. The surveys were conducted as web surveys, meaning the participants filled out the survey questionnaire online. A web survey was chosen to conduct this survey in view of the fact that data was collected from adolescents and parents in two countries, Austria and Norway. Gathering data online saved participants from having to print out and send questionnaires to the author, and the author having to personally collect questionnaire sheets from several places in Austria and Norway. Moreover, an advantage of web surveys is that the gathered data can be retrieved directly into an analysis program, which prevents errors during data processing (Bryman, 2015).

The questionnaires for both adolescents and parents were created in three different languages, English, German and Norwegian. First, the English version was created, revised and finalised. In the next step, the English versions were translated to both German and Norwegian. This was done to facilitate the participants responding in their respective mother tongues.

Survey participants

The participants of both surveys were contacted via the EAL instructors who were interviewed for the thesis. All interviewees were contacted via e-mail and asked to send out the links to the surveys to their clients. The Austrian experts were sent links to the German versions of the questionnaires, and the Norwegian experts were sent links to the Norwegian versions. A total of 20 people answered the survey, 15 adolescents and five parents. All participants filled out the Norwegian questionnaire, and as no Norwegian questionnaires were sent to Austria, it is safe to assume that all participants were Norwegian.

3.2.1 Qualitative interview

By means of qualitative interviews, it has been possible to get an in-depth view of the experts' experience and perception of different situations connected to the intervention. The interviews

were conducted as semi-structured interviews, among them one interview with two interviewees.

The semi-structured interview is an approach to collecting in-depth data of a person's personal opinion and experience. The aim is to understand how the experts interviewed in this study understand the impact of the intervention they offer. Qualitative interviewing is a method used to gather information in order to understand the issues of concern from the interviewees perspective. Data is produced through the interaction between interviewer and interviewee. The interviewer has an interview guide which he/she roughly follows. In spite of an interview guide which should cover fairly specific topics to be investigated during the interview, the interviewer can slightly change the wording of the questions when conducting the interview. Furthermore, it is possible to add follow-up questions as necessary. As a consequence, semi-structured interviews leave room for flexibility if required (Bryman, 2015; Hug & Poscheschnik, 2012; Kvale & Brinkmann, 2015).

As probably one of the most widely employed methods in qualitative research (Bryman, 2015), the qualitative interview was a method of choice for the study at hand. The type of interviews used were semi-structured interviews. By keeping the ability to change the order of questions, slightly adapt the wording, as well as to add follow-up questions that might become necessary during the interview, this method was suited best to collect data from experts for this study. The rather general frame of reference for the questions was another positive aspect that led to the selection of this method (Bryman, 2015), especially when considering that most questions asked were open-ended questions aiming to discover the expert's personal experience of an issue. The questions asked in the interviews were part of an interview guide, aside from spontaneous follow-up questions that came up during the interview. The interview guide was created based on the theoretical basis of EAL and social competence.

One of the interviews was conducted as a group interview with two experts at once. This was done for convenience. The same interview guide was used for this interview as was used in the semi-structured interviews, and the fact that two interviewees were interviewed at once did not lead to noticeable changes in answers when compared to the other interviews.

Interviewing face-to-face, on the phone or via Skype

The interviews for this study were conducted in person, on the phone and via Skype. The different means of interviewing were chosen due to time, and cost related issues. Conducting interviews face-to-face was the prioritised means of interviewing for this study. Therefore, interviews were conducted face-to-face when possible. Interviewing via Skype or phone were decisions made on the basis of time and cost related reasons. Due to interviews being conducted in different countries, Skype was deemed an appropriate means of communication. The advantages of using Skype to interview study participants is that it allows the visual element of interviewer and interviewee being able to see each other (Bryman, 2015). One interviewee was interviewed via phone, as this was the interviewee's preferred means of communication rather than Skype.

Choice of interview partners

In this study, interviews were conducted in two European countries. Cultural differences were not an issue, and the fact that the interviews were conducted in the interviewees' mother tongue prevented potential language problems.

The persons interviewed for this study were chosen due to their practical expertise in the area of research. The experts interviewed in Norway were found through a request for information from the national "Hest og helse" (2018) organisation as well as research on the internet. The experts in Austria were found through the homepage of the "Österreichisches Kuratorium für Landtechnik und Landentwicklung" [ÖKL] (2018) and the "Tiroler Pferdesportverband" (2018). Potential interview partners were contacted in order of location to keep the necessary expenditure for travel, time and cost low.

A total of 18 requests for interviews were sent via e-mail, five of them to experts in Norway, 13 of them to experts in Austria. 13 people responded, of which three did not consider themselves as working with EAL, and two did not have time to participate. One e-mail was answered with a request to carry out the interview together with a second expert, leading to a total of eight interviews and nine experts interviewed. Of the nine experts interviewed, three requested sight of the interview questions beforehand.

3.2.2 Ethics

An ethical issue relevant for this thesis is that the interview's objective should not be discussed (Kvale & Brinkmann, 2015). This issue might not be as critical in this thesis as could be the case in other interviews where questions address more personal and private issues of the interviewee. However, it is important to mention that the interviews aimed to discover the experts' personal opinion and perception of their own work, which can be a sensitive issue. Three of the interviewees requested the interview guide before the interview, which resulted in them knowing the specific research area of the thesis before the interview.

Personal data security

The study was registered at the Norwegian Center for Research Data (Norsk Senter for Forskningsdata – NSD) (NSD, 2018) and accepted. The participants of the interviews as well as the surveys were informed about the dimension of this thesis (master thesis) and that personal data will be anonymised once registered and deleted after completion of the study. During the transcription of the interviews, headphones were used to ensure personal data security.

To ensure personal data protection, all interview participants were informed about the fact that the interviews were to be audio-taped beforehand. Furthermore, they were informed that any data generated in the interviews will be anonymised, as well as that the audio recordings will be deleted after completion of the thesis.

The adolescent participants in the survey were asked for information on their age and sex. Information on the survey participants' age was necessary data to ensure the inclusion criterion for participation in the study was met. Information on the participants' sex was used to determine the ratio of male to female survey participants. This was relevant in relation to determining differences in benefits for male and female intervention participants.

In the eyes of the author, disclosing personal data was not relevant in the parents' version of the questionnaire. This assumption is made based on the fact that no questions on age, sex, relationship status, place of residence, names or other personal information were included.

Independence

The thesis at hand is exclusively the project of the author. Neither the idea for the study nor its implementation are connected to any outside requests, financing or other influences. This makes this thesis an independent piece of research.

3.3 Key data for survey

Two surveys were conducted in this study, one aimed at adolescent participants of EAL and the other at their parents. Due to limited resources, a convenience sample was chosen. A disadvantage of convenience samples is that they cannot produce generalisable data (Bryman, 2015). Still, the information gathered through the surveys can shed light on tendencies among participants of EAL and provide information for further research on the issues.

The web survey was created with Google Forms and was administered online. The questions for the web survey are based on issues mentioned in the interviews with the experts. This was chosen to align the questions for the adolescents and their parents with issues that seemed relevant for the experts. Since the interviews for the study were done in Austria and Norway, the web survey was to be conducted in both countries as well. Therefore, Austrian and Norwegian versions of the questionnaire were created. Both versions were based on the original English version, which then was translated to the respective languages.

The questions for the web survey were tested with adolescents who received the Norwegian version of the questionnaire, and one Austrian adolescent who received the German questionnaire. Feedback gathered from this pre-testing of the questions was used to improve the questionnaire. The feedback given on the pilot version of the Norwegian questionnaire regarded the possible answers for the question about the participant's age ("How old are you"), which were then adapted to implement the issues pointed out by the adolescents. The second issue pointed out was not aimed at a specific question but was a general query wondering if the questionnaire was aimed at situations at the stables or meant to investigate more generally. This comment was acknowledged by adapting the introductory text to clarify the survey's aim as a report of experiences in all situations. There were no issues pointed out with the German version of the questionnaire.

The questions in the adolescent survey can be categorised as follows, even though most questions can be relevant for several categories:

1. Communication: 7, 9, 11, 13
2. Awareness of self and surroundings: 5, 6, 8,
3. Self-confidence: 10, 12, 15
4. Impulse control: 1, 2, 3, 4, 14

Other: 16, 17

One German and one Norwegian parent read through the respective parent versions of the questionnaire and no problems were pointed out. The questions in the parent survey can be categorised as follows, even though several of the questions could be assigned different categories as well, as the questions comprise different aspects that are relevant for more than one category:

1. Communication: 2, 3, 13,
2. Awareness of self and surroundings: 12
3. Self-confidence: 5, 6, 8
4. Impulse control: 4, 9, 11, 10
5. Other: 1, 7, 14

To gather data for the surveys, all interview partners were contacted and asked to distribute the links to the survey among their clients and the clients' parents. This implies that the survey aimed to reach participants from the same places as the interviews were conducted, and all survey participants had participated in EAL rather than other forms of equine-assisted interventions. The surveys were administered as web surveys that had to be filled out online. The questions were closed questions where the survey participants checked a box on a Likert scale from 1 (never/no) to 6 (always/yes). Filling out the questionnaire does not require personal identification, and questions on personal experiences are asked. This means the

author does not have to check if the answers are correct for both information on sex and age, number of children, and subjective answers such as personal experience of a situation.

Since EAL is a rather new and specific concept, the author chose to use the words “horse activity”, ”time with the horses”, and “session with the horse” rather than EAL, in order to make the questionnaire more understandable for potential participants.

3.4 Key data relating to the interviews

Eight interviews were conducted in total. One of the interviews included two participants at the same time. Six of the interviews were conducted with experts in Austria and two of the interviews were conducted with experts in Norway. A total of 4:53:43 (hours:minutes:seconds) of interview were recorded and 72 pages of transcript written. Five of the interviewees had the transcripts of the interviews sent via e-mail when they had been completed.

The interviews were conducted during a period of 5 weeks, with seven of the interviews being conducted during the first two weeks, and one interview three weeks later. During this time, one minor adaptation was made to the German version of the interview guide. The adaptation was an adjustment of the German translation of the word EAL. During and after the first two interviews I became aware of the fact that the term ‘EAL’ is neither used nor known in Austria. Due to that I adapted the term to ‘Heilpädagogisch Reiten’ (remedial pedagogical riding), the term used in Austria. In the course of the interviews I was made aware that the official terminology was changed from ‘Heilpädagogisch Reiten’ to ‘Heilpädagogische Förderung mit dem Pferd’ (remedial pedagogical support with horses) in January 2018. Due to the recency of that change, the old term ‘Heilpädagogisch Reiten’ was still well known, and it posed no problem for the understanding of the questions.

Interview situation

Five out of a total of eight interviews were conducted in person. One interview was conducted via phone, and two of the interviews, among them the focus group, were conducted via Skype. Conducting interviews via Skype was necessary due to long distances between interviewer and interviewee, as well as time and cost related reasons. Interviewing via Skype

was suggested by one of the interviewees and deemed a reasonable way of conducting the interview by the others. One participant offered to give an interview on the phone, so the method was adapted.

The audio recording was done with a voice recorder on a phone, or a voice recorder on a laptop. When it did not disrupt the situations, both devices were used to ensure best possible recordings. Voice recording on the laptop was used for the interviews via Skype and on the phone.

Four of the experts requested the interview questions beforehand. Five experts did not know the questions before the interview.

The interviews conducted in this study were held in the interviewees' native language. Six of the interviews were conducted with experts in Austria, and therefore undertaken in German. Two interviews were conducted with experts in Norway, using Norwegian as the interview language.

The transcriptions were done in the corresponding languages. Due to time restraints, only citations used in the thesis were translated to English.

3.5 Trustworthiness and validity

Trustworthiness is a term used in qualitative research, and is described with four different aspects, namely credibility, transferability, dependability, and confirmability. These are the qualitative equivalents to internal validity, external validity, reliability, and objectivity, which are terms used to describe quantitative research.

Credibility and internal validity

Credibility can be understood as the qualitative counterpart of internal validity, which is used in quantitative research. Its aim is to ensure that a study measures what it is supposed to measure (Kvale & Brinkmann, 2015; Shenton, 2004). In the study at hand it is important to consider that a mobile phone was used to record the interviews. This might have influenced the way some of the interviewees answered questions during the interviews. To give as much reassurance as possible to the interviewees, they were informed that recordings will be deleted

after completion of the thesis. Moreover, all interviewees knew that all data will be depersonalised in the thesis, but nevertheless this might still have influenced some of the interviewees. To make the interview situation as comfortable as possible for the interviewees, the author tried to accommodate the interviewees' wishes as far as possible. The face-to-face interviews were conducted at a place the interviewees chose, for example, one interview was conducted outside in the sunshine. Another interview was conducted in the private home of one of the interviewees, whereas three interviews were conducted at the interviewees' workplace. Interviewing in a familiar place might have made the situation more comfortable for the interviewees, which in turn added to their subjective well-being, and as a result their willingness to answer my questions. The questions in the interview guide were mainly open-ended questions, encouraging the participant to elaborate and explain personal perceptions of a given issue. However, the author does not know if the participants answered the questions truthfully, even though this is assumed.

In the survey, the questions were to be answered on a Likert scale from one to six. This inhibits participants from elaborating on their perception of a given issue, a fact that might have influenced the study's internal validity in a negative way. However, the Likert scale was chosen as a means to answer questions in order to keep the effort of answering the questionnaire as low as possible for the study's participants. Moreover, answering on a Likert scale might not reflect the exact perception of an issue a given participant might have, but only the closest possible answer to what the participant might experience. This would influence the survey's results in a negative way, but it is difficult to control for in an online survey. Furthermore, the author does not know if the survey participants answered the questions truthfully, or if the questions were understood the way they were intended to be understood. To prevent this, the questionnaire was piloted and handed out to nine young adolescents in order to check their understanding of the questions. Most questions were understood the way they were intended to be understood; the ones that were not were adapted in the way the adolescents suggested.

In the interviews, seven experts were from Austria, whereas two came from Norway. This might have had an impact on the study's internal validity, as the number of experts per country is not balanced. However, as there are more EAL instructors in Austria than in Norway, this is reflected in the sampling of the interview participants. For both the interviews and the survey, a bigger number of participants would have increased the study's validity. In

particular, the parent survey has a low number of participants, which makes it necessary to interpret the results with caution. However, a larger number of participants for the survey as well as for the interviews was not possible due to limited resources. These factors can influence the study's internal validity, and it is for the reader to interpret their credibility and internal validity.

All these factors contributed to the study's credibility and internal validity, and the author did her best to describe all factors that might have influenced the study's results in as detailed a way as possible.

Transferability and external validity

Transferability is the qualitative equivalent to external validity, and refers to the extent to which the study's findings can be applied to different situations (Shenton, 2004). The study at hand is a case-study, with a rather small number of participants. This makes it difficult to predict what results would be found if the study were to be replicated. To accommodate for that as best as possible within the bounds of possibility, interviews were conducted in two different countries, namely Austria and Norway. Furthermore, the participants' businesses were structured in different way, from big businesses with several animals on the participant's own farm, to participants working on small farms with only horses, or as freelancers. These differences among the interview participants might help to shed light on the perceived influence of EAL on social competence in adolescents rather than other aspects such as being on a farm with various animals that might influence the adolescents' social competence.

Dependability and reliability

Dependability is a term used in qualitative research and reflects what reliability means in quantitative research. It addresses the question of whether the study were to be repeated identically to the one at hand, similar results would be obtained (Shenton, 2004).

In order to ensure the highest possible dependability and reliability in this study, the author chose to conduct the study with two different methods. Semi-structured interviews were conducted to collect detailed descriptions of experts' perception of EAL's influence on adolescent social competence. To elaborate the results found in the interviews, two surveys were conducted, one among adolescent EAL participants and one among their parents. This

was done to collect data on different points of view from people involved. To collect data on the adolescents' and their parents' points of view, a survey was the method of choice in order to reach more participants than would have been possible with interviews due to limited resources. In large part, the survey reflects issues that have been mentioned in the interviews. However, more participants would have made it possible to get a more differentiated picture on the compared perceptions.

If more experts had been interviewed and more people had participated in the surveys, the study's dependability and reliability would have increased even more. However, this was not possible due to limited resources. These issues influence the study's dependability and reliability, but the use of different methods can be seen as an aspect that might increase the study's dependability and reliability.

4 Analysis

In this chapter, the details of the analytic process of the different data gathered are described. The first part is about the analysis of the survey data collected. The data for both the adolescent and the parent survey are reported and analysed. The second part gives a description of the interview partners' businesses and way of interviewing. Furthermore, the main aspects found in the interviews are described, building on a four-category model introduced in the thesis' literature review.

4.1 Surveys

The data gathered through both the adolescent survey and the parent survey are from the Norwegian versions of the questionnaires, hence the author assumes that only Norwegian adolescents and parents participated in the study. All data was put into the Stata analysis program to examine the results. The data were analysed separately, in order to see how adolescents and parents respectively perceive the impact of EAL on social competence. For single questions, the data was compared across surveys.

Adolescent survey

The survey for adolescents consisted of 19 questions in total, 17 of which were to be answered on a Likert scale from one (never/no) to six (always/yes). The first two questions checked the adolescent's sex and age.

15 participants responded, all of them female. As shown in Figure 10, 86.7% of the respondents were between 15 and 20 years

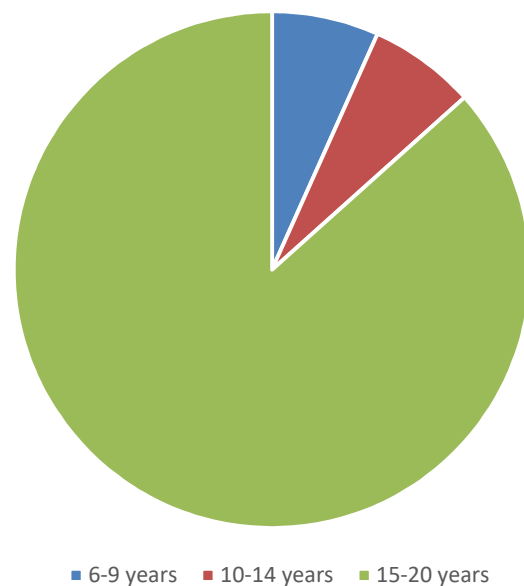


Figure 10. Age of Adolescent Survey Participants

old, which corresponds to 13 adolescents. 6.7%, reflecting one participant, was between 10 and 14 years old. In total this corresponds to 93.4% of the participants. One respondent (6.7%) was between six and nine years old.

Two questions in the survey only received 14 answers (questions 12 and 16) even though 15 adolescents participated in the survey. The author does not know if the participants jumped over the questions by accident and forgot to answer, if they did not want to answer, or if they found the questions difficult to understand. To analyse the questions, the descriptives were calculated in Stata, a program for analysing quantitative data.

Parent survey

The parent survey consists of 15 questions in total, 14 of which had to be answered on a Likert scale from one (never/no) to six (always/yes). One question checked how many children the participants had (see Figure 11). The survey had five participants in total, resulting in a high chance for error, and indicates that the data cannot be considered representative. Questions 6 and 9-14 only got four answers despite

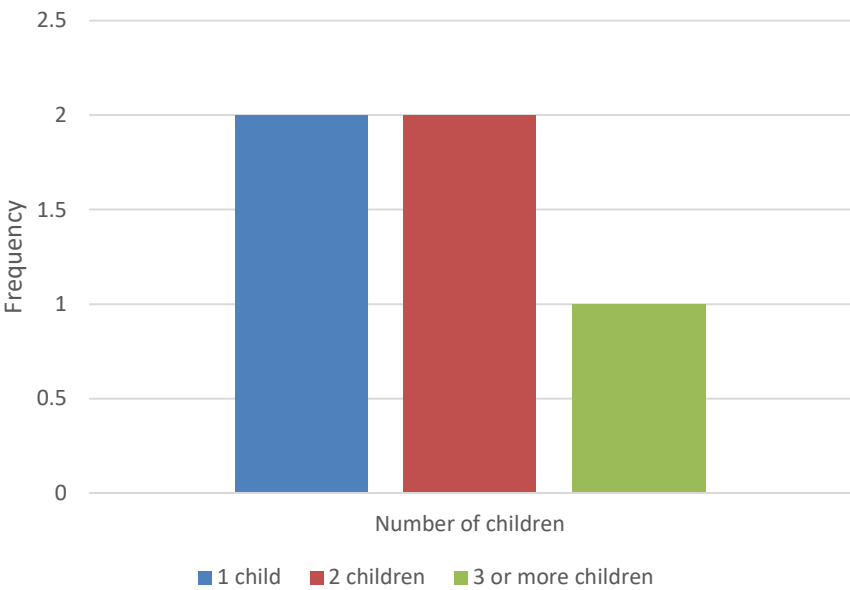


Figure 11. Adolescent Survey, Histogram - Number of Children per Parent

five participating parents. These questions asked about rather abstract behavioural concepts of adolescent behaviour and state of mind. This might indicate that the questions were too abstract and difficult to grasp.

4.2 Interviews

Transcription

The transcription of the interviews was done continuously from the day of the first interview. To transcribe the interviews, the voice recordings were played at a slower speed to facilitate transcription. To ensure personal data protection, headphones were used for the transcription process. The interviews were transcribed with a focus on content rather than language. Most interviewees spoke their dialects, a fact irrelevant to the analysis of the interviews. In the transcription of the interviews, the different dialects were not taken account of, but the transcripts were kept in High German and standard Bokmål. If changing from dialect to the standard language changed the meaning of a statement, the statement was kept in dialect.

To keep a certain fluency in the transcription, filler words and other small reactions such as “aha”, “mhm”, “isn’t it” from interviewer as well as interviewee were only transcribed in the first interview. They were considered irrelevant and not transcribed in the other interviews.

Coding

To analyse the data collected in the interviews with the experts, the interviews were coded in NVivo 11 (QSR International, 2018). In the first step, codes were created by focused coding (Bryman, 2015). By reading through the transcripts and highlighting recurring issues, codes were created and applied to relevant sections in the transcripts. In the second step, the transcripts were searched for terms specifically relevant with respect to the research question. In the last step, the transcripts were checked for expected terms and concepts based on theory on EAL (Hug & Poscheschnik, 2012).

Terms specifically searched for in the transcripts are illustrated in Table 3:

Table 3.
Specific Terms Searched for in Analysis

English	German	Norwegian
Transfer	Übertrag*	Overfør*

Master*	Können, schaff*, meister*	Mestr*
Mirror*	Spiegel*	Speil*
Accept	Annehmen	Godta, aksept, ta, tilbake*
Communicat*	Verst* (Verständnis, verstehen)	Forstå, kommuni*
Direct	Direct	Direct
Emotion, feelings	Emotion, Gefühl*	Emosjon, følelse
Success	Erfolg	suksess

Through the process of coding the data, several codes were defined. These codes were then separated into themes and concepts as follows from Table 4:

Table 4.
Themes and Concepts for Coding Interview Data

Themes	Concepts
Challenges	Feedback
Changes	Communication
Clients	Emotion
Improvement	Mastery
Learning	mirroring
Social competence	Specific value of the horse
	Transfer to other situations

Description of the interview partners

In total, two men and seven women were interviewed. They all had several years of experience ranging from five years to 23 years of working with EAL. Seven out of nine interviewees come from Austria, two of them from Norway. Most interviews were conducted in person, among them both interviews with Norwegian experts. One interview was conducted on the phone, and three via Skype. All interviewees who were interviewed through Skype requested the interview guide beforehand. Six out of nine interviewees worked on their own farm, with several employees, whereas two were employees themselves and one worked as a freelancer. Experts 8 and 9 worked on the same farm, but none of the other experts knew each other, or worked at the same place.

Five out of nine experts offered only EAL on their farm. Four of the experts, two from Austria and both experts from Norway, also offered several other interventions on their farms. Five of the experts only worked with horses, whereas four offered different forms of intervention, or interventions with animals other than horses. One expert owns horses and llamas, but was interviewed only about her work with horses. Three experts work on farms with various animals such as chickens, donkeys, horses, pigs, cats, dogs and others. These experts were also interviewed exclusively about their work with horses, even though advantages and disadvantages of different animals occasionally were drawn in.

The target groups for the interventions varies broadly among all experts. Two experts work with people of all ages, four experts focused on working with children and adolescents, and three of them reported that they worked mainly with children.

For an overview of characteristics of the individual experts, please see Table 7 and Table 8 in the attachment (Appendix A).

5 Results

This chapter describes the results from the adolescents' and parents' surveys and the interviews with the experts. Through triangulation of the results, the importance of the individual aspects for the different groups will be highlighted. The results are thematically organised, and the main findings will be summarised at the end of the chapter.

This thesis results are based on interviews with experts on EAL and are substantiated by a survey of adolescent EAL participants and one among the participants' parents. The questions used in the interview guide, and those for both surveys are attached in appendix B (interview guide), appendix C (adolescent survey questions), and appendix D (parent survey questions). Furthermore, complete tables with the results from the surveys are added in appendix E (adolescents) and appendix F (parents).

In the analysis of the interviews, many aspects which are relevant for both EAL and social competence were mentioned. These aspects can be categorised into four main categories: communication, awareness of self and surroundings, self-confidence, impulse control (see Figure 12). The survey questionnaires for both adolescents and adults were created on the basis of the data gathered in the

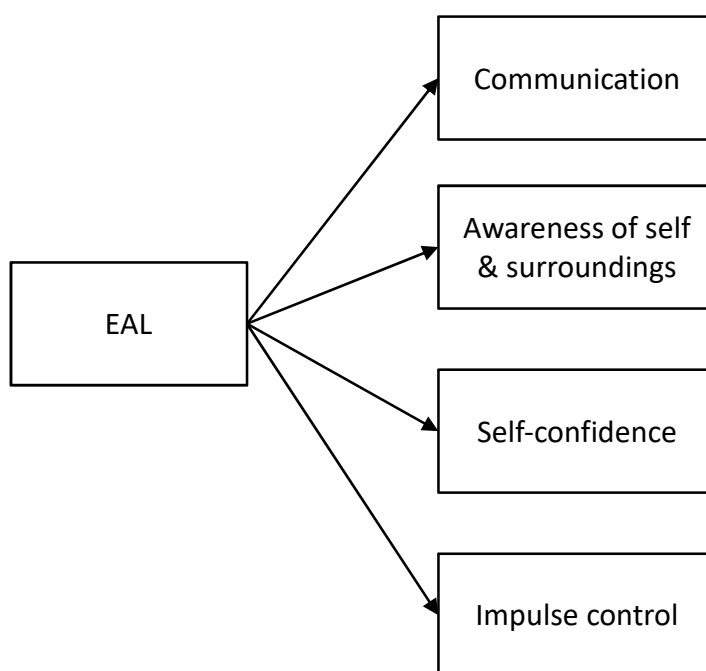


Figure 12. Subcategories of EAL

interviews. Therefore, the results from the surveys circle around the same four categories that were established on the basis of interview data and literature review.

During the interviews with the Austrian experts, I became aware of the fact that the term “EAL” and various German translations of it were not known to the experts. During the last interview with experts 8 and 9 this issue came up again, and I learned that international

organisations such as PATH Intl. (2018) and the terms used by them are hardly known in Austria. This can be attributed to the fact that equine-assisted intervention is a regulated field of work in Austria. The national association “Österreichisches Kuratorium für Therapeutisches Reiten” (2018) offers education within the field and stipulates the education and training required to be a certified instructor. Education is offered within four areas of equine-assisted interventions, Hippotherapy, remedial pedagogical and therapeutic enhancement with horses (Heilpädagogische und Therapeutische Förderung mit dem Pferd), riding for the disabled (Integratives Reiten) and occupational therapy with horses (Ergotherapie mit Pferd) (Österreichisches Kuratorium für Therapeutisches Reiten, 2018).

The Norwegian experts have not mentioned any similar national organisation that regulates the education required to offer equine-assisted interventions. However, riding physiotherapy (ridefysioterapi) represents an exception to this rule. For riding physiotherapy, the Federation for riding physiotherapy – Norwegian Physiotherapist Association (Faggruppe for ridefysioterapi – Norsk fysioterapeut forbund) regulates and certifies candidates to be riding physiotherapists (Norsk fysioterapeutforbund, 2018). In Norway, the volunteer organisation “Hest og helse” (2018) can be seen as the organisation closest to the OKTR in Austria. “Hest og helse” offers courses on different topics in the field of equine-assisted activities, collects information on the issue and provides a platform for communication and exchange of information on issues related to equine-assisted interventions. Due to the fact that there is no national organisation stipulating the education required to work as an instructor for equine-assisted interventions, international organisations and providers may be better known.

5.1 Communication

Regarding communication, the experts mention different aspects that can be seen as relevant for communication, and the survey participants answered questions aimed at the issue. These aspects are depicted in Figure 13.

Feedback

Expert 7 mentioned that “the horse gives lots of feedback to the client”. This was mentioned in the context of collaboration on a task where the client, the horse and the expert worked together. In addition to that she pointed out that the interaction between the client and the horse is the part of the intervention where the client learns most. “It is best when there is interaction. The horse is allowed to snort, wave or swish its tail or turn its ears because this is where most interaction happens. The client gets a reaction to his or her actions”. This can be seen in relation to the thesis’

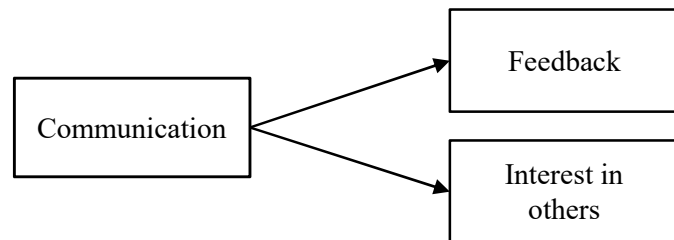


Figure 13. Aspects of communication

theoretical framework, where

Vygotsky (1978) highlights the importance of social contexts as a necessity for development in a person. Expert 7 mentions different behaviour patterns in the horse’s reaction to the client. Due to the simplicity and clarity of a horse’s body language, even clients with communication impairment understand the horse’s intentions. As expert 3 said, “people with impairments who struggle with their communication are able to feel the horse’s mood and intentions. That really works well”. Expert 4 adds that “with new clients, I start with observing the horse from the distance to get to know its body language”. Experts 2 and 4 mentioned that learning the horse’s body language is an important part of EAL sessions. Their main reason for that is to ensure that the client understands what the horse is trying to communicate to him/her. This is validated by the adolescent version of the survey, where participants answered that they usually understood what the horses wanted to tell them ($M = 4.87, SD = .74$). Another important aspect that indicates good communication skills is to be able to quickly pick up on someone saying one thing but meaning another. The adolescents in the survey reported that this is a skill they master well ($M = 4.87, SD = .99$). This can be validated by the parents who reported that their children’s communication in general improved since they started with EAL ($M = 4.75, SD = .5$).

Expert 5 states that “the horse immediately reacts if the client is fidgeting or thumping his/her legs against the horse’s body a lot, then the horse will get twitchy too.” In that way the horse mirrors the client’s behaviour and gives direct feedback through that. When asked if they

experienced specific changes in their clients as a result of any specific actions they take during an EAL session, expert 8 gave an example,

It is always interesting to see when a child with, for example, ADHD is extremely restless, the horse gets restless too. It might begin to prance, whip its tail or puff air towards the client. The clients usually stop right there and ask me what is going on. This gives me the possibility to explain and illustrate how the client's restlessness is transferred to the horse, which then got restless too. The horse mirrors the client and if you explain to the client what is going on, they understand and usually change their behaviour in the long-term. (Expert 8)

Interest in others

Expert 1 explains how children are more concerned that the horse likes them than that their teacher does. Expert 8 points to feedback she got from parents about how their children,

only played alone, or not with other boys or girls, you know, the boys-girls thing that often is an issue at that age [primary school age] but then the parents get feedback that things are working much better at school. (Expert 8)

It can be interpreted as confirming the experts' perception that interest in and contact with peers becomes less of an issue after EAL participation. This can be validated by the answers from the adolescent questionnaire, in which most adolescents ticked that they do not like to spend time alone ($M = 2.47$, $SD = 1.06$), and is further supported by the parents who answered similarly ($M = 2.4$, $SD = 1.14$).

5.2 Awareness of self and surroundings

The category of awareness of self and surroundings comprises five different aspects, as is shown in Figure 14.

Emotions

Expert 4 states that emotions play an important role in working with a client and a horse. He describes how, during a conversation, the focus usually lies on the horse first. “Over time, the focus shifts from the horse to the client. One tries to explore feelings and needs the client might have, which can be a very sensitive matter”. He also points to the learning possibilities that arise in emotional situations.

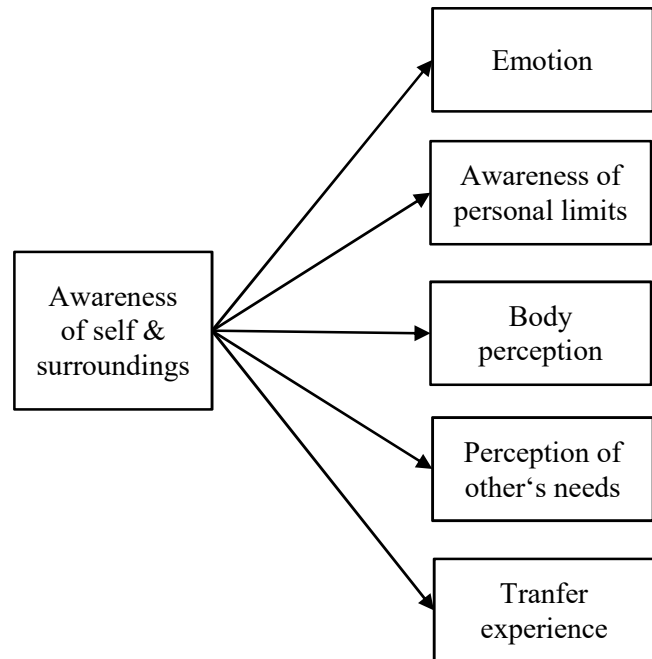


Figure 14. Aspects of awareness of self and surroundings

Aggressiveness or a lot of pressure are things a horse reacts to very sensitively. If it then gets a chance to run away, it will. [...] For many clients who might be used to working with a lot of pressure it is an eye-opening experience to see that gentleness can achieve much more with a horse.
(Expert 4)

Expert 7 points to the importance of the emotional contact initiation between the client and the horse. For her it is an important aspect of her sessions. She says, “The children learn about the horse’s mood on that day, if it is tired or energetic, or if it is happy to see the client. This emotional contact is very satisfying for clients”. To achieve this emotional contact between a client and the horse, tasks like grooming and petting the horse are essential. Furthermore, she comments on changes that often occur for adolescent clients, “Changes appear especially for emotional issues. This is particularly relevant for children who come from families who are struggling emotionally or socially”.

A different issue regarding emotions are emotional experiences that are specific to interventions with horses. Compared to dogs, horses are big animals that can carry a client.

Expert 7 mentions that children are attracted to the fact that they can ride on the horses and be carried. This aspect also came up in the interview with expert 1, who experienced the positive response of clients when they sat on the horse. She ascribes this to the horse 'walking for the client'.

It works particularly well for clients who usually struggle to calm down. 'I do not have to move, it moves me' in a literal and emotional sense. I can let feelings and emotions that are flowing in on me be, without having to do something about them. I can trust in the handler knowing what he/she is doing while I experience emotional relief. This includes emotional relief and relief in a physical sense. I do not have to run, I am carried. A part of my suffering stops if I do not have to do anything. I do not have to want anything, I do not have to do anything, I am allowed to just let it happen (Expert 1)

Awareness of self

Expert 4 explains that the awareness of one's own limits and one's personal space is an issue that can be worked on with EAL. Exercises are run where the client has to define his/her personal space by making a physical line on the ground that defines the borders of their space. Then the client gets to decide how close the horse is allowed to get. The experience and visualisation of the personal space is a great exercise for raising awareness to the fact that it is the client who can define the borders and decide how close others are allowed to get. According to expert 4 this is a particularly sensitive issue for clients who experienced abuse. Exploring one's personal space and experiencing limits in a safe context can be seen as a good precondition for learning to state one's position and stand up for oneself. Kolb (1984) suggests that a concrete experience is necessary for learning to occur, and the context of EAL opens up for the client to learn about him/herself.

Another issue related to self-awareness is the assessment of one's personal limitations. Experts 8 and 9 point out that many of their clients struggle with assessing their own abilities. Expert 8 gives the example of clients turning around on a horse, forgetting to hold on, and as a consequence falling off. "You have to be constantly alert because some clients just don't know their own body's limitations", says expert 8. Even though expert 9 affirms that, she mentions that many clients quickly get to know certain limitations and learn to ask for help. She elaborates, "Even clients who tend to overestimate their abilities will sooner or later get into situations with the horse where they will need help. Be it from a peer or from the handler".

The parents' survey suggests that self-awareness increases through participation in EAL, as parents typically averagely ($M = 4.75$, $SD = .5$) reported an increase of self-awareness in their child.

Body perception

Expert 5 addresses the issue of body perception as one of the main improvements she sees in her clients. She explains that many clients are lopsided when sitting on a horse without realising it. The rhythmic movements of the walking horse rock the client from one side to the other and force him/her to rebalance him/herself constantly. This is affirmed and elaborated by expert 6, who states that the clients improve their motor skills when riding the horses. Furthermore, expert 5 claims that she sees a great improvement in coordination and balance in clients that come to EAL sessions regularly.

Expert 9 elaborates,

Self-evaluation is something many children are not trusted with anymore. On one side, it is understandable to a certain degree because I see the overestimation clients have of their capabilities, but on the other side, children need to learn to assess for themselves if they are too hot or too cold, or if they want to take off or put on a layer. The same thing applies for situations where they did or did not manage a task. They will have to evaluate how their strategy worked and, if it did not, perhaps adapt it. (Expert 9)

Perception of others' needs and feelings

Considering the abilities to perceive others' needs and feelings, and being able to take someone else's perspective, expert 5 explains,

Mutual consideration and awareness of others gets practised a lot, because the horse will directly react to the client's behaviour. If the client is twitchy, the horse will get twitchy as well. Another example is in a situation where if the client is not paying attention to what he/she is doing at the moment, the horse will eventually do what it wants or just stop, and if nothing is happening any more, the client will realise themselves that something is not right (expert 5).

The ability to recognise others' needs is not perceived as a challenge by the adolescents, with mean values for all questions referring to the ability to recognise others' needs being 5 or

above. It is not possible to see if the adolescents improved their ability to recognise others' needs due to EAL, or if they had no problems with that from the start. However, since the experts described that mutual awareness gets practised a lot during EAL, it can be suggested that EAL might have a positive impact on awareness of others' needs in adolescents.

Expert 9 mentions that children quickly begin to accept peers who are different from them.

It is great to see how clients who do not have any specific issues are considerate of those who do. They accept their difference without picking on them. It is nice to see how the clients become more tolerant and appreciative.
(Expert 9)

In addition, she points out that it is important to set a good example because “the clients will adopt it from us, as well as the horses, and the horses don't care. They don't mind at all if someone is a little different, and this is adopted by the clients.”

Moreover, expert 9 sees it as one of her tasks to encourage her clients to be kind and friendly with the horses, a prevailing mood that should depict the dynamic of the whole group. According to expert 9, her clients usually take this positive dynamic with them automatically. This then opens up possibilities to transfer positive interaction to other situations. She illustrates with an example,

I frequently let clients choose exercises for a group member of theirs, something that works pretty well. Over time I can see how the clients respond to one another and choose tasks they know the other one likes or is good at.
(Expert 9)

However, she acknowledges that it is a challenge for some clients to be in a group with strangers, but she sees how the clients' common interest in the horse helps to reduce the stress of being in a group with strangers. For some, friendships develop outside the framework of EAL.

Transfer experience to new situations

Expert 7 points to certain rules that apply when being around horses. “I cannot scream, lash about or jump. When being around a horse I have to be calm. Otherwise the horse might be startled. That is something the clients learn pretty fast and can quickly transfer to other situations such as in a family context. Parents often report that their child has become calmer,

does not irritate his/her siblings or try to constantly intrude their play”. This is affirmed by expert 5, who points to feedback from parents who said that their children reported they had to do the same thing with the horse, so felt they could try it in the given different situation as well.

This is also reflected in the answers from both surveys. On the one hand, adolescents reported that they use skills that they learned in EAL at home and in school ($M = 4.93, SD = 1.22$), on the other hand, parents reported that their children used skills at home that they had learned in EAL ($M = 5, SD = 0$).

Expert 3 affirms that one can see how the clients learn from different situations. She emphasises that “according to my experience, the clients are quick to grasp the dynamics of a herd and see the role a specific horse has, but to transfer this recognition to their own situation is the crucial point. That is where the pedagogue or therapist’s work starts. So, it is easy to recognise things in others, and especially in animals, [...] but to translate it to their own situation can be challenging”.

5.3 Self- confidence

Within the category of self-confidence, two aspects are comprised, namely mastery and self-worth, as is illustrated in Figure 15.

Mastery

An issue reported mainly by the Norwegian experts was mastery; however, experts from both countries claimed it was a central issue. Expert 6 stated that being around horses offers mastery experiences on all levels, from grooming the

horse to riding and having control. She elaborates that “being with horses requires the client to take responsibility, take control, be organised and much more”. All these activities offer concrete experiences that can lead to learning, as Kolb (1984) suggests, and it happens in a social situation (client and horse) as Vygotsky’s (1978) theory highlights. Since horses are such big animals, dealing with them requires courage, which in turn leads to a feeling of

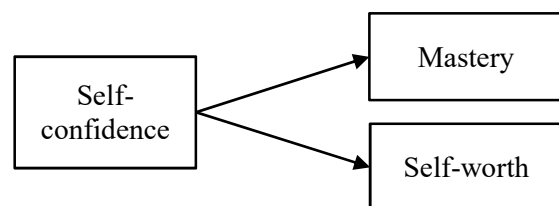


Figure 15. Aspects of self-confidence

success and mastery when a task is managed. This is reflected by the participants in the adolescent survey who expressed that they feel confident when they are around horses ($M = 5.36, SD = .74$). This was affirmed by the parents' perception of the adolescents' confidence during sessions with horses ($M = 5.75, SD = .5$), and after some time with participation in EAL ($M = 5.5, SD = .58$), where parents perceived their children as more self-confident than before EAL.

Expert 2 points out that it is the handler's role to find tasks that the client can complete successfully in order to create mastery experiences, whereas expert 9 ascribes the commonly mentioned mastery experiences clients get during EAL to the fact that many clients are rarely allowed to try things because often someone immediately offers help. She says,

By now I can easily stand having little progress some days, if for example instead a client manages to open the grooming box all by him/herself. Being allowed to try something and really engage in something without someone immediately offering help. I think that is why mastery experiences become more of an issue now. (Expert 9)

Self-worth

Expert 5 mentions the improvement of self-confidence in clients who participate in EAL regularly as one of the visible improvements. She works with positive reinforcement as a means to strengthen self-worth in clients.

Expert 1 points out that it is the expert's job to see where a given client needs support, where he/she can encourage strengths in the client and help him/her to be more well-disposed towards him/herself. In addition, she talks about how self-confidence can be supported by the fact that a horse does not judge.

5.4 Impulse control

In the following, the two aspects in the category of impulse control are described. The relation between the two aspects, respect borders and concentration, and impulse control is depicted in Figure 16.

Respect borders

Expert 5 mentions that there are rules that apply when being around and working with the horses. These rules have to be obeyed due to safety reasons and clients usually understand their necessity. Due to the horse's great stimulative nature, clients try to do their

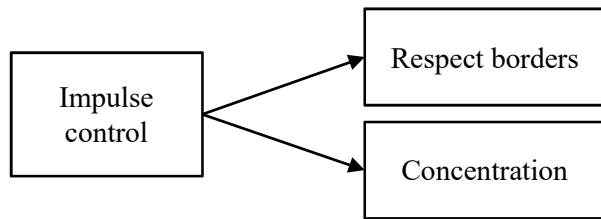


Figure 16. Aspects of impulse control

best to abide the rules that have been agreed upon. In addition, the clients are made aware of the consequences if they do not adhere to the rules, such as not being allowed to ride, but only groom and lead the horse, or having to dismount the horse. Expert 7 confirms that certain rules have to be obeyed when around a horse. "I cannot scream or lash about or jump around a horse. I have to stay calm, otherwise the horse might be startled and dangerous situations might occur".

Expert 1 explains that respecting borders is a big issue of our time. Many of the younger clients have few limits and are treated like princes and princesses, which can result in a big disappointment if things do not go as they expected. "It is important for the children to know when they reach a limit and when it is necessary to look out for somebody else's needs.

In the adolescent survey, the adolescents answered a question about whether they thought it got easier to adhere to the rules since they started with EAL ($M = 4.5$, $SD = 1.51$).

Concentration

Expert 5 mentions that she experiences that children struggle less with concentration. She ascribes this to the fact that the clients sit on the horse's back and cannot just jump off. In addition, she describes how she does not have to warn a client about something he/she is doing if he/she becomes absent-minded because she can let the horse stop what it is doing, which will attract the client's attention and give her a chance to continue with a given exercise.

On the issue of the client's ability to concentrate, expert 8 explains that this is a huge issue among her clients. The ability to concentrate for 60 minutes during a group session, or even 30 minutes during an individual session is a great challenge for many.

After participating in EAL, parents' responses to the survey substantiate what experts 5, 8 and 9 said, as the parents answered that their childrens' concentration had improved since their participation in EAL ($M = 4,5$, $SD = .58$).

A further issue connected to concentration is memory capacity. This is seen by experts 8 and 9 as a big challenge for clients today. Expert 9 illustrates with an example,

On the one hand, a group of clients wanted new exercises after few repetitions and a different horse after they had worked with the same one for three sessions. On the other hand, they struggle to remember some of the basic things, such as remembering to pat the horse after trotting without being reminded to do so every time. With some issues it feels like starting again at the same point every week, without any real progress that you can build on with new exercises. (Expert 9)

Expert 8 affirms, "Some clients can't remember which horse they worked with from one week to the next. In addition, they cannot remember who was the first to ride, as they usually take turns with that". When asked about improvements she experiences in her clients, expert 8 says that concentration is one of the aspects that measurably gets better. "It is nice that measurable things like concentration get better. Children manage to focus on one thing for a longer time, for example doing homework gets easier for them". Endurance is an issue that was mentioned only by experts 8 and 9. Both claimed that is a big issue for today's clients. Many refuse to try something they could not do at the first try again.

5.5 Other relevant aspects

Calmness

An issue that is mentioned by experts, adolescents and parents alike is calmness. This finding was not expected to play an important role in EAL, but in retrospect its importance seems comprehensible to the author.

Calmness can be understood as a sub-category of self-confidence, as the feeling of mastery might induce a feeling of calmness. This is explained by expert 8, who regularly observes how clients begin to calm down after a few weeks of regular sessions. She ascribes this to the

fact that the clients begin to have an idea of how things work, experience constancy and know that there is usually the same routine in every session.

The adolescents in the survey reported that they felt calm when they were around the horses ($M = 5.67, SD = .49$).

According to expert 5, a common improvement for clients who struggle with ADHD or face challenges with impulse control and restlessness is that sitting on a horse calms them down. Expert 5 experiences this change particularly in individual settings with a client and a horse.

The state of calmness seems to last according to the parents' answers to whether their child seems calmer after a session of EAL ($M = 5, SD = .71$). In addition, expert 1 affirms that clients with ADHD calm down during EAL sessions. Expert 7 mentions that she gets feedback from clients' parents saying that their child is calmer and more balanced for two to three days after the session.

Expert 8 illustrates with an example,

*I put children that face very different challenges in one group, for example a child with developmental delays, who is very slow, and a child with a diagnosis of ADHD who is restless and cannot stay still. It is interesting to see how these two children start to level out each other's issues. The first child improves as he/she realises that the other child will always be first at everything, while the other child slows down because he/she realises that the child who does things calmly and carefully might get further with the horse than the restless child.
(Expert 8)*

5.6 Further findings

Further findings will be described in the attachment, appendix F.

5.7 Summary of results

Communication is understood as one of the most important aspects of social competence that can be promoted through EAL. Non-verbal communication between horse and client in particular provides an important learning possibility. Non-verbal communication is practised

in situations where the horse mirrors the client, and thereby gives direct and immediate feedback. Interest in others, which is understood as closely related to communication, is promoted through the shared interest in the horse, which opens up social communication among EAL participants, or the client and the handler.

Furthermore, experts perceive it as easier for clients to open up to their own emotions. The horse works as a shared point of focus during these situations and can play the role of a buffer. Moreover, the perception of others' needs is practiced as the client learns to put the horse's needs before his/her own. Experiences and skills that are learned in situations such as these are, according to parents of EAL participants, transferred to other situations in the home.

Experts, adolescents and parents report that clients experience mastery during EAL sessions. In addition, self-worth might be impacted by the unconditional acceptance clients experience from the horse. As mastery experiences and a high feeling of self-worth are said to influence self-confidence, the participants in this study perceive that EAL influences self-confidence in adolescent clients.

The last category reported in the results was impulse control, which is experienced to be impacted by EAL through reasonable and understandable rules, direct feedback from the horse if the latter are not obeyed, and increased concentration.

To sum up, expert 8 describes the general impact of EAL on social competence in her clients as she experiences it,

It is more of an overall issue. Insecure clients appear more confident and get clearer, for example when asking for help. Their articulation improves and the clients are more aware of their own needs and communicate if they are afraid of something or do not dare to do something yet. Furthermore, the impact of social competence in group interaction is visible in how clients come to terms with each other and do each other favours. Issues like being the first one out when riding, or arguing about who does what task on a given day become less over time, and asking the other what they want to do or offering to let them have the first turn when riding gets to be the natural thing to do. In a way, things get more balanced. (Expert 8)

6 Discussion

The study at hand aimed to explore the perceived influence of EAL on social competence in adolescents. How experts offering EAL perceive its impact on their adolescent clients was investigated. In addition, the adolescents themselves, as well as their parents, reported their perception of the influence EAL has on their own and respectively their childrens' social competence. In this chapter, the findings from the study will be discussed with findings reported in the literature research.

6.1 Perceptions of the study participants

The study showed that each group of study participants put their main focus on a different category, even though the overall findings support each other.

The experts seem to experience the biggest impact of EAL on adolescent social competence in what is included in the communication category. In the interviews, the different forms of feedback from horse to client are highlighted as inducing changes in the participants' behaviour. Furthermore, the non-verbal communication to convey direct and immediate feedback to the clients is emphasised as particularly important, as soft and subtle communication, as expressed by horses, is frequently new to clients.

In the adolescent survey the main reports include aspects of awareness of others. The perception of others' needs seems in particular not to be a problem for the adolescents. This is an interesting result, as the perception of, and adequate reaction to others' needs is often closely related to social competence.

A further aspect highlighted in the adolescent survey which did not receive much focus in the preparation of the study but nevertheless turned out to be highly relevant was calmness. The adolescents reported to be calmed through being with the horses, an aspect the author did not follow up on during the interviews. In retrospect, this would have been an interesting aspect to ask about, as it can be understood as a precondition for learning. A way to understand the reports of calmness both during and after EAL might be attributable to the calming physical effect contact with animals has on humans (Beetz et al., 2010; Chandler, 2017).

The survey for the parents of the adolescent EAL participants revealed the highest average answer for questions on the perceived self-competence of the adolescents during as well as after EAL. This aligns well with the findings from the adolescent survey. The second aspect the parent survey reported similarly to the adolescent survey was the aspect of calmness.

6.2 Communication

Communication is an essential aspect of social competence (McCabe & Meller, 2004). In order to master communication at a level that is necessary for good social competence, verbal and non-verbal language have to be mastered (Ogden, 2015). As (Zeller, 2001) mentions, physical contact, which is more easily initiated between an animal and a human being than between human beings, is seen as beneficial for non-verbal communication in particular.

Communication is one of the three categories that were highlighted in this study. For the purpose of this thesis, the category of communication was divided into two sub-categories, feedback and interest in others. Feedback in different forms, such as mirroring or non-verbal feedback through clearly understandable body language, is described in many studies investigating EAL (Carlsson et al., 2015; Gehrke, 2009; Steen, 2002; Zeller, 2001). This was attested to in the interviews with the experts who particularly pointed out the importance of body language. They described how the non-verbal feedback from a horse is quickly understood by the clients, without the having to be explained (Expert 2, 3, 4, 5, 7, 8). The importance of non-verbal language in communication is highlighted by Beauchamp and Anderson (2010). In the adolescent survey, this finding was substantiated, as most participants answered that they ‘usually understand what the horses want to tell them ($M = 4.87$).

Another aspect of communication, interest in others, is connected to a generally positive attitude towards others (Brachthäuser, 2012). In this study, the umbrella term ‘interest in others’ was chosen to describe prosocial behaviour, positive relationships and the wish to interact with others in a social way. Interest in others is described in the literature by the horses’ inviting character that often prompts social interaction (Træen et al., 2012).

Additionally, EAL can help to initiate contact between peers, if conducted in small groups (Pendry & Roeter, 2013). In this situation, the horse can work as a buffer for closeness and

contact (Schmidt, 2008). Furthermore, collaboration with others is practised, either with peers or with the horse, when tasks have to be accomplished (Perkins, 2018). The Biophilia hypothesis by E. O. Wilson reflects another aspect that can be interpreted as interest in others. Taylor and Signal (2005) suggest that empathy and interest in animals can be understood as a predictor of human-human empathy. This is mentioned by expert 1, who explains that many clients are more concerned if the horse likes them, than if their teacher does, for example. In the surveys, interest in others can be seen in the answers of the adolescents which showed that most of the adolescents would rather not play alone, an aspect perceived in the same way by their parents.

6.3 Awareness of self and surroundings

The category of awareness of self and surroundings is divided into six sub-categories: emotion, awareness of personal limits, body perception, perception of other's needs, and transfer of experience to a new situation.

Paying attention to the self is important to be aware of one's own feelings in the here-and-now. It can help to express wishes, needs, and emotions in an adequate manner, which is crucial for positive social relations. In the literature, EAL's influence on emotions and emotional skills is mentioned in connection with horses' ability to notice very subtle emotional cues and respond to them by reflecting them to the client. The client then has the possibility to see a 'picture' of his/her own emotions (Carlsson et al., 2014; Latella & Abrams, 2015; Waite & Bourke, 2013). Emotions as an issue during EAL were mentioned by expert 4, who said that going through emotional situations in the presence of a horse alleviates the situation for the participants. Expert 1 affirmed that, saying that change is apparent, particularly in emotional issues the clients have.

Awareness of personal limits and own space are issues mentioned by several experts. Experts 8 and 9, for example, pointed out that the assessment of one's own abilities is a skill that is mastered by fewer and fewer clients each year. When being around horses, the clients will sooner or later get into a situation where they need help. This offers a chance for the clients to get to know their own limitations and ask for help. This can be seen in connection to the thesis' theoretical framework and Vygotsky's (1978) zone of proximal development. In the

parents' survey, the corresponding question about whether the parents perceive an impact of EAL on their children's self-awareness, received agreeing answers ($M = 4.75$). This is an aspect of EAL the author did not find described in the literature, but that was supported in both the interviews and the parent survey.

Another aspect that receives attention in the literature is the impact of EAL on the client's body perception. As this is more prevalent in interventions aimed at improving motor skills, for example, this is not as prominent in EAL as it might be in hippotherapy, for example. However, the effects on the clients are still noticeable as Carlsson (2016), Latella and Abrams (2015), and Steen (2002) explain. In the interviews, expert 5 mentioned a visible improvement in coordination and balance in her clients. Expert 9 focused on many clients' problems to assess their own bodily perceptions. She explained that these clients need to learn how to trust in their own body perception and make decisions based on it.

In addition to being aware of oneself, awareness of others' needs is an important part of social competence. The ability to be aware of others' feelings, and react adequately is an essential aspect of social competence (Semrud-Clikeman, 2007). Ho et al. (2017) examined and described how the perception of others' needs can be practised during EAL. This was affirmed by expert 5 who explained that mutual consideration and awareness of others gets practised a lot. In the adolescent survey, most adolescents considered their ability of seeing and correctly responding to others' needs as high or very high ($M = 5.3$), which can be interpreted as related to the practise of these skills during EAL lessons.

Considering the clients' ability to transfer the experiences they have during EAL sessions to other situations, Garcia (2010) particularly points out the positive reframing of relationships through the equine-human relationship. This can be understood as the transference of new skills from EAL to other situations. Experts 7 and 5 mentioned the issue in the interviews. Both explained that they get feedback from parents who report that their child uses skills he/she learned in EAL also at home. The adolescent ($M = 4.4$) and the parent ($M = 5$) surveys both confirm that. Additionally, it should be mentioned that expert 3 pointed out that transferring what is learned in EAL to other situations is where the pedagogue's work really starts.

6.4 Self-confidence

According to Ogden (2015), social competence is an important factor for mastery and high quality of life, and Chandler (2017) says the interaction with horses can offer various possibilities for mastery experiences and improve self-confidence in EAL clients. Mastery is one of the two sub-categories of self-confidence that are described in this thesis. In the interviews, expert 6 supported Chandler's (2017) statement, and explained that horses offer mastery on all levels. This was reported by the adolescents through a feeling of confidence when being with horses ($M = 5.36$). This was perceived the same way by the parents, who reported experiencing their child as competent during the sessions with the horses ($M = 5.75$), and as more competent after EAL-sessions as compared to before ($M = 5.5$). In the literature on social competence, mastery is seen as an essential factor for motivation and self-confidence (Bandura, 1977; Pajares, 2008; Schunk & Zimmerman, 2012).

The other sub-category of self-confidence, as described in this master thesis, is self-worth (Semrud-Clikeman, 2007). In the literature on EAL, most focus lies on the horse's non-judgemental character (Brachthäuser, 2012; Carlsson et al., 2014). Exactly the same was said by expert 1, who stated that the development of self-confidence can be supported by the fact that horses do not judge. Expert 5, who explains that she uses positive reinforcement to strengthen self-worth in her clients, picks up this aspect as related to facilitation of self-confidence.

6.5 Impulse control

Impulse control is the last category that was described in this thesis. Its sub-categories are respect borders and concentration.

Orpinas and Horne (2006) explain that emotions are a part of human lives, and that it is part of being socially competent to be aware of one's own emotions in order to control them. Control over one's emotions is a necessity to regulate feelings and behaviour (Ogden, 2015), which in turn is part of impulse control (Brachthäuser, 2012). As part of EAL, the clients need to learn to control their emotions and impulses, and be aware of their current situation, own feelings and emotions. Having control over body language and energy are crucial skills, as

horses react very sensitive to aggression or pressure (Carlsson, 2016; Træen et al., 2012). Having control over one's emotions is an important aspect of social competence, as impulsive behaviour might impact a child's social relations (Semrud-Clikeman, 2007).

In order to control one's impulses, the client has to be focused on the here-and-now. This is why working together with horses requires concentration. In the study, concentration was an issue mentioned by three of the experts. One mentioned it in relation to working with the horse as a means to gain the client's attention if he/she becomes absent-minded during a task. Expert 8 talked about how clients' attention span had become notably less during the previous years, but that a given client's ability to concentrate increases after participating in EAL. The perceived impact of EAL on concentration is also an issue in the parent survey. On average, the parents perceive that their child's concentration has improved since he/she has started with EAL ($M = 4.5$).

During EAL, clear rules and borders are defined that the clients need to obey. This is usually quickly accepted by clients, as they receive direct and immediate feedback from the horses on their actions and behaviour. Feedback from a horse is solely attributed to the client's behaviour, but never to the client as a person. This makes it easier to accept given rules and obey them ("Satisfying the workers who appreciate galloping change," 2016; Zeller, 2001). Experts 5 and 7 support that, and add that rules are set up for safety reasons, something that most clients can understand. In the survey among the adolescents, they confirmed that they thought it got easier to adhere to the rules since their started with EAL ($M = 4.5$). This was confirmed by the parents who experienced that their child more easily accepts and obeys rules since he/she started with EAL ($M = 5$).

6.6 Other findings

An aspect that is described less in the literature on EAL but has received certain attention in studies on the physiological impact of animals on humans, is calmness. Several studies describe the release of oxytocin, which leads to a decrease in cortisol levels and stress symptoms (Beetz et al., 2010; Chandler, 2017). In the study, calmness was an aspect that was mentioned in the results of every group of participants. Several experts described the calming effect of horses on children that seem restless. Expert 5 mentioned the horses' calming effects

in relation to ADHD and other challenges that lead to difficulties with impulse control. Experts 1, 7 and 8, affirm it by describing similar experiences. In the adolescent survey, the participants reported feeling calm when being around the horses ($M = 5.69$) to a very high degree. Most parents reported perceiving their children as calmer after they participated in EAL ($M = 5$).

6.7 Limitations and further research

The main aim of the study was to investigate how different groups perceive EAL's impact on adolescent social competence. Due to limited time and resources, the study was conducted with a small convenience sample, therefore the findings cannot be generalised broadly. A bigger sample of both interviewees and survey participants would have increased the explanatory power of this study. Moreover, a more experienced interviewer might have been able to pick up on other issues the experts could have elaborated on.

Several factors were not considered in this study, due to a lack of time and resources. A factor that might impact the results in the parent survey is the parents' prior experience with animals. Experiences with animals might impact the parents' perception of EALs influence on their children. A different issue that might be worth investigating in greater detail is calmness. This aspect seemed to be particularly important to the adolescents but was not included to a big extent in this study. Further research on its role in relation to social competence is needed.

Social competence represents a broad variety of skills, competences, and behaviours. Therefore, only some of its aspects could be investigated in this study and further research is necessary. However, this study shows that research on the use of EAL to promote social competence in adolescents might hold potential for encouraging findings.

7 Conclusion

This thesis is about the perceived influence of EAL on adolescent social competence. In a mixed methods study, the perception of EAL's impact on social competence in adolescents was investigated. This was done by a mixed methods study that included interviews with experts working with EAL and surveys for both adolescent EAL participants and their parents. The surveys were based on the results discovered in the interviews.

The main findings of the study include that all investigated groups perceived EAL as influential in social competence in adolescents. It is particularly noteworthy that adolescents, parents and experts all agreed on the positive impact EAL had on self-confidence. Furthermore, the adolescent survey participants agreed that the perception of others' needs is not an issue of difficulty for them. This study cannot answer the question whether this can be attributed to EAL or if other factors influenced the answers in the survey, but the result is interesting nonetheless. A further aspect that was not paid much attention to in the interviews, but had one of the highest mean scores in the adolescent and the parent survey, was calmness. This might be interesting to investigate in greater detail in further research.

Through the results found in the study, the research questions can be answered as follows:

1. How do experts working as EAL instructors perceive the influence of EAL on social competence in their adolescent clients?

The experts perceive EAL as influential for social competence in adolescents. All categories described in this thesis are reported as significant both for the development of social competence and for the work with EAL. The experts agree that social competence is impacted by EAL, even though the focus of each expert lies on different aspects. However, the positive impact was experienced by all experts and they highlight the importance of the horse to the shared experiences that lead to positive development.

2. How do adolescent participants of EAL perceive its influence on their social competence?

The adolescent survey indicated that adolescents experience an impact of EAL in themselves. Questions that aimed at specific aspects of EAL or relevant skills for social competence

reached high average means, indicating a positive impact of EAL on social competence. Still, the results have to be interpreted with caution, as the sample size was small (n=15), and the results only indicative of possible tendencies among adolescent EAL participants in a similar sample.

3. How do parents of adolescent EAL participants perceive the influence of EAL on their childrens' social competence?

The final question in the adult survey asked if the parents perceived EAL as beneficial for their children, which all participants agreed to be the case. However, the parent survey had an extremely small sample of only five participants, and results from this study could easily be attributed to coincidence. Therefore, the third research question cannot be answered to its entire extent, even though the sample in this study considered EAL influential for adolescent social competence.

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Appendix A

Table 5.
Information about the Experts - Part 1

	Sex	Working since	Country	Interview	Questions beforehand	Business form	Permanent employees	Offers
Expert 1	F	2001	Austria	Skype	Yes	Own farm	>5	EAL and other
Expert 2	F	2003	Norway	Personal	No	Own farm	<5	EAL and other
Expert 3	F	2002	Austria	Phone	No	Own farm	<5	EAL and other
Expert 4	M	2013	Austria	Personal	No	Own farm	<5	EAL
Expert 5	F	2004	Austria	Personal	No	Employee	-	EAA
Expert 6	F	1995	Norway	Personal	No	Employee	-	EAL
Expert 7	F	2013	Austria	Personal	No	Freelance	-	EAL
Expert 8	F	2006	Austria	Skype	Yes	Own farm	<5	EAL
Expert 9	F	2006	Austria	Skype	Yes	Own farm	<5	EAL

Note. EAA=equine-assisted activities

Table 6.
Information about the Experts - Part 2

	Animals	Target group
Expert 1	Horses, Llamas	People with special needs
Expert 2	Horses	Mainly children and adolescents, with and without special needs
Expert 3	Cows, Horses, Donkeys, Goats, Pigs, Chickens, Cats, Dog	Children, adolescents and young adults, with and without special needs
Expert 4	Horses, Chickens, Peacocks, Geese, Dogs, Cats	Children and adolescents in difficult living situations
Expert 5	Horses	Mainly children with issues with social behaviour
Expert 6	Bunnies, horses, goats, llamas, donkey, pig, chickens, ducks, dog	Children and adolescents,
Expert 7	Horses	All ages, psycho social issues, special needs education
Expert 8	Horses	Children with developmental issues, psychosocial issues, trauma
Expert 9	Horses	Children without special needs

Appendix B

Questions interview guide

Thank you for taking your time to give me this interview. All the following questions will be about EAL and your personal/own perception of different aspects around it. There is no right or wrong answer to the questions. In the thesis all information will be depersonalised and the voice recording is going to be deleted after completion of the thesis.

1. Can you tell me about your work?
 - a. How would you describe EAL and what it does for someone who came here on someone else's recommendation of, but doesn't really know what EAL entails?
2. Why did you start giving EAL lessons?
 - a. What was your motivation behind using horses in particular, not other animals?
3. What kind of education do you have?
 - a. Did you learn something that was directly transferable to your practice?
4. Do you follow guidelines for EAL [from (international) associations like e.g. EAGALA or PATH (Norwegian version)/ÖKL or EAGALA (German version)?]
5. Tell me about your clients.
 - a. For what reasons do your clients come to you?
 - b. In what clients do you see most change? What kind of change?
6. What does your typical EAL lesson look like?
 - a. What is most important for you during the EAL lessons? Why?
7. Have you noticed specific aspects of EAL that you connect to changes in your clients?

- a. Are general patterns observable in which way EAL works for clients?
 - b. Do you think the experiences the adolescents get with the horses are transferable to other areas of their lives?
8. Have you experienced any challenges related to your work with EAL?
9. How do you see EAL today in comparison to 10 years ago?
10. Do you read new research on EAL?
11. Would you do something different in your EAL lessons if you had more resources/funding? If yes, what?

Extra questions:

12. Are there any common/general changes you notice in the adolescents' behaviour during EAL lessons?
- a. Are these changes usually more general changes or are they typically related to the adolescents' individual issues/challenges? Can you give examples?
 - b. Are the adolescents' experiences different with different horses?
 - c. Is there a typical point in the course of EAL lessons when clients have fall-backs?

Appendix C

Questions Survey Adolescents

Hi! :-)

My name is Katharina and I'm a student at the University of Oslo. Currently I'm working on my master's thesis about how you (and your parents and instructors) experience the influence of being with horses has on you. This includes time you spend with the horses, as well as at home or in school. That's where I'd need your help. If you answer some questions about how you like being with horses and what your experiences are, you'd help me a lot! To answer, you'll have to tick off the answer that fits best for you, so there are no right or wrong answers to those questions.

To thank you for your help, I'll give an apple or carrot to the five horses in the picture on top. The horses would love to get a treat like that, and at the same time you would help me out a lot with my paper! ☺

This thesis is written at the institute of educational sciences at the University of Oslo. The survey is part of a master's thesis on equine-assisted learning. All answers will be kept confidential (only I can see your answers) and depersonalised (nobody gets to know your name, not even me) for the thesis. After finalisation of the thesis, all data (your answers) will be deleted.

If you have any questions, don't hesitate to contact me!

Contact details:

Name: Katharina Roi

e-mail: katharoi@student.uv.uio.no

THANKS A MILLION FOR YOUR HELP!!!

(c) Photo www.binsein.at

0.0. Are you a boy or a girl?

Boy	Girl
-----	------

0.1. How old are you?

5-9	10-14	15-20
-----	-------	-------

1. I quickly lose interest if a task is difficult

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

2. I like it when something new happens all the time

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

3. I listen to adults if they ask me to do something

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

4. I can get very angry if something doesn't go my way

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

5. I can see if someone is sad

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

6. I feel sorry for someone who is treated unfairly

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

7. It is hard for me to make contact with other children

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

8. I feel sorry for others if they don't feel well

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

9. I can quickly pick up if someone says one thing but means another

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

10. When I am with the horses I feel confident

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

11. I usually understand what the horses want to tell me

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

12. Being around horses makes me calm

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

13. I like it best to play alone (without other children or animals) // I like it best to be alone (without friends or animals)

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

14. It is easier for me to stick to the rules since I started the sessions with the horses

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

15. I prefer if things stay the way they are and nothing changes

1	2	3	4	5	6
---	---	---	---	---	---

No

Yes

16. Do you think you have learned something in your sessions with the horses?

1	2	3	4	5	6
---	---	---	---	---	---

No

Yes

17. Do you use things you learned with the horses in school or at home too?

1	2	3	4	5	6
---	---	---	---	---	---

No

Yes

Appendix D

Questions Survey Parents

Dear parent! :-)

My name is Katharina and I'm a student at the University of Oslo. Currently I'm working on my master's thesis about horse-assisted learning. I'm interested in how you think being with horses influences your child. By answering these questions, you'd help me a lot! For your help I would give an apple or carrot to the five horses in the picture on top. They would really love to get a treat like that, and at the same time you would help me out a lot with my paper! In addition, I'm sure your child would love to know you helped some horses to a treat!

This thesis is written at the institute of educational sciences at the University of Oslo. The survey is part of a master's thesis on equine-assisted learning. All answers will be kept confidential and depersonalised for the thesis. After finalisation of the thesis all data (your answers) will be deleted.

If you have any questions, please don't hesitate to contact me!

Contact details:

Name: Katharina Roi

e-mail: katharoi@student.uv.uio.no

THANKS A MILLION!!!

(c) Photo www.binsein.at

0.0 How many children do you have?

1	2	3 or more
---	---	-----------

1 Does your child generally enjoy his/her sessions with the horses?

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

2. Does your child prefer to play alone?

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

3. Does your child struggle with initiating contact with other kids?

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

4. Does your child easily get very angry if things don't go his/her way?

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

5. Do you think your child feels confident during sessions with the horses?

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

6. Is your child calmer after session with the horses (as compared to before the session)?

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

7. At home, does your child use skills he/she learned in the sessions with the horses? (i.e. Impulse control/ self-confidence/communication/ awareness of self/or other things)

1	2	3	4	5	6
---	---	---	---	---	---

Never

Always

8. Does your child seem more self-confident now than before he/she started with horse activities?

1	2	3	4	5	6
---	---	---	---	---	---

No

Yes

9. Do you think your child shows better self-control now, as compared to before he/she started with horse activities?

1	2	3	4	5	6
---	---	---	---	---	---

No

Yes

10. Is it easier for your child to obey rules now than it was before he/she started with horse activities?

1	2	3	4	5	6
---	---	---	---	---	---

No

Yes

11. Do you think your child's concentration has improved since he/she started with horse activities?

1	2	3	4	5	6
---	---	---	---	---	---

No

Yes

12. Do you think your child is more aware of him-/herself now than he/she was before he/she started with horse activities?

1	2	3	4	5	6
---	---	---	---	---	---

No

Yes

13. Do you think your child is better at communicating with others now than he/she was before he/she started with horse activities?

1	2	3	4	5	6
---	---	---	---	---	---

No

Yes

14. Overall, do you think your child benefits from horse activities in any form?

1	2	3	4	5	6
---	---	---	---	---	---

No

Yes

Appendix E

Table 7.
Statistics Results Adolescent Survey

Variable	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>	<i>Code</i>
Communication						
contact children	15	3	1.2	2	5	sp7
pick up meaning	15	4.87	.99	3	6	sp9
understand horse	15	4.87	.74	4	6	sp11
play alone	15	2.47	1.06	1	5	sp13
Awareness of self and surroundings						
see someone sad	15	5	.76	4	6	sp5
sorry unfair	15	5.27	1.22	2	6	sp6
sorry if not well	15	5	1.46	1	6	sp8
Self-confidence						
confident	14	5.36	.75	4	6	sp10
calm	15	5.67	.49	5	6	sp12
no changes	15	4.13	1.41	1	6	sp15
Impulse control						
lose interest	15	3.67	1.5	1	6	sp1
something new	15	3.8	1.15	2	6	sp2
listen to adults	15	4.93	.6	4	6	sp3
very angry	15	3.8	1.08	2	6	sp4
stick to rules	14	4.5	1.51	2	6	sp14
Other						
learned from EAL	15	5.87	.52	4	6	sp16
use the learned	15	4.93	1.22	2	6	sp17

Note. Results reported ordered by category. Sp1, sp2, ... = question 1, question 2,...

Table 8.
Correlations Adolescent Survey

	sp1	sp2	sp3	sp4	sp5	sp6	sp7	sp8	sp9	sp10	sp11	sp12	sp13	sp14	sp15	sp16	sp17
sp1	1.00																
sp2	0.17	1.00															
sp3	-0.51	-0.13	1.00														
sp4	0.62*	0.25	-0.58	1.00													
sp5	0.06	0.25	0.16	0.26	1.00												
sp6	-0.07	0.35	-0.17	0.10	-0.23	1.00											
sp7	0.84*	0.36	-0.50	0.50	0.16	0.15	1.00										
sp8	-0.13	0.38	-0.16	0.05	-0.06	0.92*	0.12	1.00									
sp9	-0.18	0.42	-0.14	0.31	0.38	0.21	0.00	0.25	1.00								
sp10	-0.04	0.44	0.40	0.07	0.23	0.02	0.14	-0.09	0.24	1.00							
sp11	-0.30	0.55*	0.46	-0.30	0.25	0.28	0.00	0.33	0.07	0.50	1.00						
sp12	-0.26	0.38	0.41	0.00	0.19	0.04	0.00	0.10	0.49	0.79*	0.46	1.00					
sp13	0.42	0.14	-0.29	0.40	0.27	0.01	0.39	0.09	0.06	-0.14	0.27	-0.09	1.00				
sp14	0.36	0.48	-0.28	0.42	0.59*	-0.18	0.23	-0.15	0.15	0.11	-0.04	-0.22	0.12	1.00			
sp15	0.63*	0.15	-0.50	0.58*	0.07	0.06	0.51	0.24	-0.04	-0.33	-0.32	-0.14	0.43	0.24	1.00		
sp16	-0.06	0.19	-0.03	0.20	-0.37	0.29	0.00	0.00	0.24	0.52	-0.05	0.38	-0.40	-0.10	-0.37	1.00	
sp17	-0.09	0.24	-0.01	0.31	0.23	0.11	0.00	0.00	0.35	0.42	-0.01	0.32	-0.19	0.41	-0.16	0.66*	1.00

Note. Results reported in order of questionnaire. Sp1, sp2, ... = question 1, question 2,...

* p<0.5

Appendix F

Table 9.
Statistics Results Parent Survey

Variable	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>	<i>Code</i>
Communication						
play alone	5	2.4	1.14	1	4	sp2v
initiate contact	5	3	.71	2	4	sp3v
better communication	4	4.75	.5	4	5	sp13v
Awareness of self and surroundings						
self-awareness	4	4.75	.5	4	5	sp12v
Self-confidence						
confident during	4	5.75	.5	5	6	sp5v
calmer after	5	5	.71	4	6	sp6v
confident since	4	5.5	.58	5	6	sp8v
Impulse control						
very angry	5	4.2	.13	2	5	sp4v
self-control	4	5	.82	4	6	sp9v
obey rules	4	5	.82	4	6	sp10v
concentration	4	4.5	.58	4	5	sp11v
Other						
enjoy EAL	5	5.6	.55	5	6	sp1v
use skills	5	5	0	5	5	sp7v
benefit	5	5.4	.9	4	6	sp14v

Note. Results reported ordered by category. Sp1v, sp2v, ... = question 1, question 2,...

* p<0.5

Table 10.
Correlations Parent Survey

	sp1v	sp2v	sp3v	sp4v	sp5v	sp6v	sp7v	sp8v	sp9v	sp10v	sp11v	sp12v	sp13v	sp14v
sp1v	1.000													
sp2v	0.72	1.000												
sp3v	0.00	-0.31	1.000											
sp4v	-0.56	-0.24	0.00	1.000										
sp5v	0.58	0.26	0.82	-0.33	1.000									
sp6v	-0.65	-0.62	0.50	0.81	0.00	1.000								
sp7v														
sp8v	0.00	-0.45	0.71	-0.58	0.58	0.00		1.000						
sp9v	-0.71	-0.95	0.50	0.00	0.00	0.50		0.71	1.000					
sp10v	-0.71	-0.63	0.50	0.82	0.00	1.00		0.00	0.50	1.000				
sp11v	0.00	0.00	0.71	0.58	0.58	0.71		0.00	0.00	0.71	1.000			
sp12v	-0.58	-0.77	0.00	-0.33	-0.33	0.00		0.58	0.82	0.00	-0.58	1.000		
sp13v	-0.58	-0.77	0.00	-0.33	-0.33	0.00		0.58	0.82	0.00	-0.58	1.00	1.000	
sp14v	-0.10	-0.69	0.40	-0.51	0.17	0.00		0.90	0.85	0.00	-0.30	0.87	0.87	1.000

Note. Results reported in order of questionnaire. Sp1v, sp2v, ... = question 1, question 2,...

Appendix G

Further findings from the interviews

Main group of clients

For expert 7, the main diagnoses and challenges her clients have when starting EAL are ADHD, impulse control disorders and autism. Expert 2, who in addition says that, “most of my clients have got one or another diagnosis”, also mentions ADHD and autism. Expert 1 and 8 confirm that diagnoses such as ADHD can often be seen in her clients.

Expert 5 says that her clients often struggle with social behaviour, behavioural problems in general, deficits in their sensory perception, as well as a lack of concentration and attention. This is affirmed by expert 8, who mentions behavioural issues, social challenges, learning disorders and traumatic experiences. Expert 5 elaborates that for many of her clients, the goal is to improve their self-worth and self-confidence, practising social competences and strengthening concentration.

Interestingly, expert 9 explains that her clients do not officially have special needs, although points out a tendency that about half of her clients could just as well participate in an intervention with a more therapeutic focus. Big issues for her clients are social interaction and memory capacity. In her opinion, the young client’s developmental progress expected at a given age is less than it was a few years ago.

Choice of animal

The reasons why the experts work with horses rather than other animals is similar for most of them. Most experts mention that working with horses was their personal fondness for horses. Expert 7 explains that many of her clients care for horses because they are,

beautiful, and big and cuddly. And if I say that a dog can be beautiful and cuddly as well, they say that one cannot sit on a dog. Furthermore, they are attracted to the horse’s size, even if it is only a small pony. Riding on the horse is what it often is about. (Expert 7)

Expert 6 mentions that clients like to work with horses because they experience mastery through their responsibility for a big animal such as a horse. In addition, the clients enjoy the fact that they can “do more with a horse than with a sheep or a duck”.

Expert 3 focuses on horses’ ability for

mirroring, work on issues of closeness and distance, ground work or observation of herd behaviour. However, all these things can be done just as well with a pig or a cow. Sometimes horses are not even as authentic in mirroring as less domesticated farm animals that have not been bred for this kind of human-animal contact. Horses that work within EAL are well-trained, and with adequate technique it is easier to make the horse do what I want. (Expert 3)

Expert 1 affirms that the choice of animal to work with is secondary and implies that every animal has different qualities and that it is more important to prioritise the client’s desires and needs. An example is given by expert 4, who explains that “everything that is aggressive, a lot of pressure, a lot of emotion, a horse will react to it very sensitively”, which can open up possibilities for learning.

Expert 2 mentions that “it is not always the horse that we can start with. It is a big animal. We considered having an animal that is a bit smaller to start with”. Furthermore, she affirms that horses are not necessarily the best animals for every participant. Expert 1 offers an example, “For clients who cross a line regularly, horses are good to work with, but dogs can be even better. [...] The issue of limits is not as relevant for horses because horses look after us more”.

Challenges

When asked about specific challenges the experts face during EAL sessions, the answers varied among the individual experts. This can indicate that for this group of interviewees, challenges are perceived very differently by every expert.

Expert 7 mentioned that she considers it a challenge to work with autistic children who show (auto-) aggressive behaviour or scream. These behaviours are often stressful for the horses and can lead to problematic situations during the session. Due to that, she works with a pedagogical assistant during sessions that are expected to be challenging. In that case, one person can focus on the client and his/her needs, whilst the other one puts her focus on the horse’s needs during a challenging situation.

Expert 5 considers it a challenge to meet the parents' expectations and know her own limitations. As an example, she mentions autistic children as particularly challenging for her, and points out that she refers them to a specialist if she considers the client's difficulties too challenging for herself and the resources she has to offer.

Expert 1 explains that she sometimes experiences it as a challenge to use and stand pressure and counter-pressure in a meaningful way, and to know when a situation needs time versus when there is a need for action.

Expert 3 explains that every day offers new challenges. As an example, she mentions that she has to evaluate the horses' moods, since horses can have a bad day just like people. In her case she said she was lucky because she does not depend on one horse having to work on a given day but can choose another horse or animal for the given session. As for challenges during an EAL session, she says "Of course there are challenges, but I am lucky to have the horse as a mediator. This is not only an advantage for me, but also for the client, because transference and countertransference are more or less omitted". Furthermore, she mentions that "working with a group of clients can be challenging, since I have to ensure safety for everyone and have to have an eye on many different things at once".

Expert 2 mentions similar issues to expert 3, when working with groups. She describes it as a possible challenge to satisfy several clients' wishes in an EAL session. This can be especially challenging if only one or two intervention leaders meet multiple clients with different wishes. Another issue she brings up are environmental influences like weather conditions that make it impossible to carry out what was planned. Moreover, it can be challenging to find employees who are competent and able to withstand challenging situations.

Expert 8 sees the main challenge in the big responsibility that comes along with working with prey animals:

Sudden noises can startle the horse and lead to accidents. From a legal perspective, working with prey animals is a grey area. You have to be fully focused at all times. You cannot lose focus because that is when an accident will happen. (Expert 8)

Expert 9 agrees to that and adds, "Even without external influences, a horse can step on a child's foot and the child might have to go to the hospital, and it is always you who is responsible".

Another issue that is mentioned by several of the experts is that of financing. Providing EAL interventions is expensive, and the costs for the participants are high. To provide high quality work, most of the experts wish for an assistant during their sessions, but only expert 8's sessions are constantly held by two handlers. Experts 1, 5, 7 and 9 do not have the resources to work with an assistant at all times, but only bring in an assistant for particularly demanding sessions. In addition to that, experts 5 and 7 pointed out that the financial support provided by the individual counties in Austria is rather low and limited to clients with specific diagnoses. Moreover, clients can only apply for funding if the expert is certified in a subgroup of equine-assisted interventions. According to expert 8, this funding was recently cut back drastically, which makes the situation even tougher for some families.

The financial situation of the clients did not come up in the interviews with the Norwegian experts. This can be attributed to several reasons, such as number of experts interviewed, that it is a less prominent issue in Norway, different regulations for applications or coincidence.

Equine health

Expert 8 mentions equine health as a crucial aspect of her work. According to her, it is important to keep the horses in a herd.

How should a horse react socially if they are stay alone in a box for 20 hours each day? They cannot react the same way as a horse that is living in a herd and practising its social competences all day long. Horses unlearn social behaviour just as we do if we do not need it. (Expert 8)

Expert 9 adds, "How is a horse supposed to help a child to develop social competences if it has the same problem [with social competences]? For a horse to do high quality work it just has to feel well".

Expert 7 describes the challenges a horse faces during an EAL session. "A horse can only react as a prey animal. Aggressive children or children who scream pose a challenge for horses. One cannot expose a horse to a situation like that for a long time".

Experts 8 and 9 add that to keep up the horses' motivation and interest in their work, they need to take breaks, just as humans do. Both say that, "after a long semester, one can see that the horses' enthusiasm and patience decreases, but after some time off one can see that their enthusiasm is back and they are happy to see the children again".