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Animal-Assisted Pedagogy: human-animal bond, developmental benefits and practical considerations

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In recent years, animal-assisted pedagogy (AAP) has gained more attention both in the media and in the educational field. Some schools and libraries have seemed to include animals as a common support in the learning process. This has sparked interest also in educational research, and thus the effects of animals as a part of education have been studied more closely. For this reason, we aim to provide insight to AAP with a literature review that explores this topic from the points of view of human-animal bond, the developmental benefits, and the practical considerations related to it. In addition, we aspire to challenge our own views of AAP and discuss how it might be brought into practice.

Based on our research, the human-animal bond is a mutually beneficial relationship that takes place between a human and an animal. Its significance in society and the multitude of benefits it offers, provide a good foundation from which to view AAP. Implementing AAP positively affects the social and emotional competences and motivation of students by the support of the comfort of the animal's presence, which enables positive experiences and interactions. The animals help to create a safe space that allows the students to feel more confident and secure, and as a result the motivation of learning increases. However, it appears that applying AAP to practice is quite challenging due to the amount of limitations and consideration of bringing an animal into a working environment. For example, allergies, fears and lack of resources may dictate whether it is possible for an educator to practice AAP.

Keywords: Animal-Assisted Pedagogy, Animal-Assisted Activity, human-animal bond, socioemotional development, benefits, motivation of learning, education

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1.Introduction and Definitions

1.1 Introduction

In the past decades animal-assisted methods to support people in different situations in their lives have gained increased attention. Especially in the media, it is common to find articles and programmes of animals helping the elderly, the disabled or people with mental health difficulties. Recently, animals have also been rising in popularity as a part in education; most commonly in learning to read. With this thesis, we would like to bring attention to animal-assisted methods as they are new and more uncommon than traditional methods of teaching. Teacher students, teachers and people interested in Animal-Assisted Pedagogy (AAP) may read this thesis and get a look into the “why”, “what”, and “how” of AAP. This thesis may help in finding out what pursuing AAP might look like in theory and in practice. This thesis is a literature review based on previous literature and research on AAP and topics related to it.

Research Questions and Source Material

Our thesis is constructed with three research questions, one for each chapter.

RQs:

- 1. What is the human-animal bond, and what is its significance?*
- 2. How does Animal-Assisted Pedagogy influence the development of social and emotional skills and the motivation of learning?*
- 3. What are the limitations and ethical considerations in organizing Animal-Assisted Pedagogy?*

With these questions, we seek answers to find out what Animal-Assisted Pedagogy is and how it works in practice.

As there is different information needed to answer each question, in each chapter the main sources are of a different nature.

The main sources in the first chapter are focused on defining what the human-animal bond is, where it is going and what its significance is. Some important research that will be discussed

in this chapter are e.g. “Human-animal studies: Remembering the past, celebrating the present, troubling the future” Shapiro (2020), “Olemuserosta aste-eroon: Filosofianhistoriallinen katsaus eläimen ja ihmisen välisestä suhteesta” by Kortetmäki & Slavov (2012) and “Human-animal bonds I: The relational significance of companion animals” by Walsh (2009). These sources along with a few others, give a good foundation to looking at the human-animal bond, and through it practices such as AAP.

The second chapter uses as main sources research and studies about AAP in relation to students' social and emotional competences and motivation for learning. We looked into several pieces of research, e.g. “How Educators Use Dogs to Support Children's Social, Emotional, and Behavioral Development” by Roberts-Schneider (2016) and “Sozialpartner Hund im Förderschwerpunkt emotionale und soziale Entwicklung” by Poppe (2011), which are taking different environments into account and were conducted in different countries. From that, we analyse a diverse insight in the matter.

For the third research question about organizing AAP and its limitations, the main sources were books about AAP in the Finnish context: “Karvaterapiaa: Eläinavusteinen työskentely Suomessa” by Ikäheimo (2013) and “Eläinavusteinen Interventio” by Kahilaniemi (2016). Both sources gave a comprehensive look into AAP. In addition, different types of both Finnish and international sources, such as guidebooks and reports of health regulations, are supporting the main sources in exploring the topic of the practical aspects of AAP.

Finnish context can be observed throughout our thesis, as it is the closest to our studies, as well as, animal-assisted practices seem to be most discussed in Finnish literature. It should also be noted that most of the literature only considers dogs as a possible animal-assistant, which can be seen in some of the studies cited in this thesis. Regardless, in this thesis, we have also wanted to consider other animals in addition to dogs, such as guinea pigs.

Us as Researchers

Our motivation behind choosing this topic came from our mutual interest in animals and their societal role, and thus animal-assisted learning. We all have previous experiences which have led us to have a very positive view of animals in education, and we hope to work as instructors for animal-assisted pedagogy in the future. We realized that our view might act as

a preconception when writing this thesis, leading some of the concerns about animal-assisted pedagogy out. Thus, in writing this thesis, we want to challenge our views; while exploring the reason animal-assisted pedagogy works, we have also dedicated a whole chapter to considering the concerns and ethical questions of animal-assisted pedagogy.

We find that having us three working on the same thesis was a richness when it came to the number of perspectives and sources we were able to take into account in finding answers to our research questions. We were able to use three languages for our sources: Finnish, English, and German, which in themselves gave us more points of view on how research, and thus animal-assisted pedagogy, has been practiced in different countries. Along with this, we find it was enriching to discuss our findings together and see what kind of thoughts they brought up. In our opinion, these are the strengths of our thesis written together. We must, however, acknowledge that the current pandemic played a part in how we were able to see each other and work together. Most of our work together was done via online calls. Each of us has our own chapter that we worked on, however, the other group members read and commented on each others' chapters regularly.

1.2. Defining Animal-Assisted Pedagogy

Animal-Assisted Pedagogy (AAP) includes both *Animal-Assisted Activities* (AAA) and *Animal-Assisted Therapy* (AAT) that take place in a pedagogical environment, such as educational institutions, daycare centers, and other learning environments (Ikäheimo, 2013; Kahilaniemi, 2016). In Finland, all these interventions are a part of Green Care activities coordinated by Green Care Finland ry which aims to promote cooperation of health care and wellbeing services with nature and animal-assisted methods (Green Care Finland, n.d.).

Animal-Assisted Activities (AAA) are situations where an animal is brought to in order to improve one's well-being by motivating, educating, and in other methods that bring joy to the situation (Ikäheimo, 2013). Areas of skills that may be exercised by AAAs include motor skills, psychological skills, social skills, ethical skills, cognitive skills, and sensory skills. Exercising these skills is important for one's everyday life in multiple ways. With primary school students, the most relevant of these include enhancing skills related to school life, playing, resting, and acting in one's surrounding environment (Kahilaniemi, 2016).

Ikäheimo (2013) mentions that Animal-Assisted Activities are instructed either by a formally trained professional in the social and health care field or a volunteer, however, the instructor must be familiarized with AAAs and visiting institutions with animals. Although the activities may be organized regularly, they are based on spontaneous activities and do not have set aims. In terms of pedagogy and the school environment, AAAs are most often organized and instructed by a teacher with an animal they have familiarized themselves with. The animal can be the teacher's own or an animal with its own instructor (Ikäheimo, 2013).

Ikäheimo (2013) describes *Animal-Assisted Therapy* (AAT) as a process in which an animal takes part in the treatment or rehabilitation of a person by improving one's physical, social, cognitive, and emotional wellbeing. AAT has clear aims and the progress of an individual or a situation is tracked as the process must be documented and evaluated. The instructor must have formal training and education in the fields of social and health care or education, including special expertise and an internship-based degree, or the therapy is done in collaboration with someone with these requirements. In AAP, therapy can be instructed by a special education teacher who meets the requirements of an AAT instructor. These activities are often organized in special education schools or classrooms (Ikäheimo, 2013).

According to Kahilaniemi (2016), animal-assisted methods are increasing in popularity as the benefits for education are becoming more widely known. Animals may be used in enhancing the diversity of educational methods. Internationally, AAP has already established itself in education, while in Finland, the increase in popularity has begun recently over findings of the possibilities animal-assisted methods may bring to different kinds of services and facilities. In Finnish education, the professionals working with an animal are often classroom teachers, special education teachers, school psychologists, or nurses (Kahilaniemi, 2016). Based on our own experiences, especially reading dog activities seem to be the most familiar in the Finnish context.

With the central concepts defined, we start by exploring our topic from the perspective of the human-animal bond, by defining it and showing its presence in society. From there we continue by looking at AAP's influence on the development of students' social and emotional skills and finish by defining the limitations and ethical considerations that have to be taken into account in animal-assisted pedagogy.

2. What is the Human-Animal Bond, and What is its Significance?

In this chapter of our thesis, we will define what a human-animal bond is, and take a look at it from the perspectives of Human-animal studies (HAS), philosophy and psychology, as well as go over the significance of human-animal bonds in the society and peoples' everyday lives. Understanding human-animal bond helps us to understand why AAA is seen to be beneficial. Furthermore, human-animal bond relates to justification and ethics of AAP.

2.1. What is the Human-animal Bond?

Defining the Human-animal Bond

Human-animal bond is a healthy relationship that benefits both people and animals mutually. Among countless other factors, this includes physical, emotional, and psychological interactions between people, animals and the environment, as defined by the American Veterinary Medical Association (AVMA, 1998 as cited in Hosey & Melfi, 2014, p.8). When following the aforementioned definition, the human-animal bond is seen as a positive and beneficial relationship at its core. Cultivating and valuing the said bond is a given, and there is an abundance of scientific evidence backing up that the physical and psychological benefits achieved through it exist in multitude of forms e.g. reduction of the risk of myocardial infarction as well as through psychosocial factors, reduction of the risk of cardio-vascular disease (Beck & Katcher, 2003), along with a multitude of psychological benefits such as reducing symptoms of depression and anxiety (Walsh, 2009).

Humans have exploited animals for their own gain throughout history, but a human-animal bond is a relationship in which neither party suffers.

Studying the Human-animal Bond

The human-animal relationship manifests itself in many forms, and it is believed that people actually have “an emotional need to connect with animals” (Hosey & Melfi, 2014, p. 2). Hence the reason why animals are present in such a diverse way in our lives e.g. pets, zoos, working animals etc. The purpose for connection with animals is something that takes place everywhere in the world and among people of all socioeconomic backgrounds. In their literature review, Hosey and Melfi mention Edward Wilson’s hypothesis of biophilia, which essentially is the idea that the humans’ dependency towards nature and animals goes beyond just the physical realm and “includes aesthetic, intellectual, cognitive and spiritual satisfaction” (Hosey & Melfi, 2014, p. 2). Biophilia hypothesis suggests that through evolutionary development, humans have learned to pay attention to their environment and the animals and vegetation in it, in order to feed themselves by hunting and gathering, as well as thriving in other ways (Beck & Katcher, 2003).

Beck and Katcher (2003) mention anthrozoology (likewise known as human-animal studies), which they go to define as the study of human-animal interactions and -bond. In understanding anthrozoology, it is crucial to explore the biophilia hypothesis in terms of this, and further explain and define these subject areas, for gaining a more complete understanding of human animal bonds.

Human-animal studies (HAS) is “the interdisciplinary study of human-animal relationships” (Shapiro, 2020). More specifically HAS includes: human-animal interactions (HAI), which consists of human-animal relationships (HAR) and human-animal bonds (HAB). Using these fields of studies we can take a closer look at how people and animals currently co-exist. As the study of the human-animal bond is a field within HAS, we can use HAS as a tool to look at human-animal bonds (Shapiro 2020).

2.2 How Has the Human-animal Bond Developed?

Looking outside the scientific frames of HAS, with more focus on the sociological and conceptual role of the human-animal bond, it can be seen that animals have been and still are integrated in society on a fundamental, inseparable level.

History of the Human-animal Bond

Throughout time, animals have been seen as powerful beings in many religious and spiritual practices (Walsh, 2009). They have held essential importance for not only everyday life and survival, but also served as a strengthened bond to nature (2009). For example dogs were viewed as companions and partners, already by the ancient people, and through them it was thought that better connections to spiritual worlds could be achieved (2009). In cultures such as ancient Egypt and Rome, dogs and cats were beloved in the society and even worshiped (2009). Each animal had their own role and symbolic meaning in peoples' lives. For instance, there is an old Chinese legend about animals, in which they are sent to the world with the purpose of guiding people in their personal growth, each animal has their own strength and mission that promotes the wellbeing of the people in question (2009).

The significance of the human-animal bond can be seen in the specific and elaborate burials that they received (Walsh, 2009). Animals have been held at such high esteem in some cultures, that they have often been buried with people and in these practises the symbolic and ideological meaning of the animal was specifically considered (Prates, 2014).

Later with the arrival of some of the bigger religions e.g. Judaism, Islam and Christianity came customs and practises that included animals and their welfare (Walsh, 2009). Even if dogs and cats have enjoyed great appreciation from people throughout the years, there have also been times when they have been condemned because of their associations towards something of ill nature e.g. cats associated with witches (2009). In and after the Middle Ages, more and more breeds of dogs and cats started to emerge, resulting in the abundance of different breeds that exist today (2009).

Unfortunately, animal abuse has existed as long as human-animal bonds have, but the first laws and animal protection organizations only saw light in the late 19th century in England and the United States (Walsh, 2009).

Contemporary Human-animal Bond

Considering the current state of the development of the human-animal bond, it differs greatly depending on many circumstances e.g. the nationality/age/gender/socioeconomic status of the person- and the species of the animal in question.

In the modern times the differences in valuing and the treating animals are tied a lot to the different cultures present in the world (Walsh, 2009). However the viewpoints on animals can differ greatly in smaller circles of people as well. There are several ideologies, religions, practices and customs that each highlight animals and their presence differently, and even if all kinds of animals have crucial roles in society, not all of them hold the same value or position in peoples' eyes (2009). Depending on what the animal's role and use for people is determined to be, it will be treated differently. Dogs are kept as pets and often have a status of being a loved family member and companion, while at the same time pigs are objectified as food, and efficiently and systematically grown in factory farms with little to no regard to their individual wellbeing, despite there being studies that prove their intelligence to be on par with dogs (Marino & Colvin 2015). Wild animals can have the status of being marvelled at, pests, hunted for various reasons, driven away from their natural environments etc.

According to a 2009 literature review article by Froma Walsh, contemporary Americans who own pets, most often regard them as "*friends (95%) and/or family members (87%)*" (APPMA National Pet Owners Survey, 2007–2008 as cited by Walsh, 2009). Americans' most commonly owned pets are dogs, the close second being cats, and then horses, birds and other animals such as rabbits etc. (2007-2008). Walsh then points out that it was shown in the survey that all respondents reported giving their pets a holiday present; with 87% including their pets in holiday celebrations (2007-2008). Walsh then also mentions that 53% of survey respondents take time off from work to care for a sick pet (2007-2008), an act of compassion which could be compared to what a parent would do for their child. This all stands to show how deep and meaningful the bond between a pet and their owner can be in the modern world.

Another intriguing example of contemporary human-animal bonds can be seen in Saara Kupšala's 2020 journal article, which discusses the Finnish people's views on farm animal welfare, giving an insight to their mindsets of the topic.

The conversation about animal welfare and conducting it in an efficient manner has been getting more heated in recent years, but even so people continue to consume plenty of meat as a part of their diet. Kupsala explains in her journal article that the estrangement from the consumed animals has a part to play in this. Factory farmed animals and their living conditions are not visible enough in the society. Kupsala notes that despite this, people are gaining more and more knowledge of the cognitive abilities and welfare of farmed animals (2020).

Kupsala conducted a study as a part of her set of three articles for her doctoral thesis, in which she compared different socio-demographic factors to see what affected Finnish people's relationships to farm animals. Gender seemed to play the most significant role of all the factors, with women being more interested in the welfare of farm animals than men. The educational background did not affect this, but the age and living environment did. Younger generations and people living in cities were more concerned about animals' well being than older generations and people living in the countryside. Pet owners were also more likely concerned about farm animal welfare than people who did not own a pet (2020).

In the other studies that Kupsala conducted for the thesis, she came to the conclusion that the cultural status of a particular farm animal has a big effect on how it is perceived in terms of e.g. intelligence and worth as a living being. She argues that building a stronger connection between the animal products that are sold at stores and their origin, is necessary for a better moral understanding of what factory farming entails. This in turn affects human-animal relationships of Finnish people in terms of farm animals (2020).

As for the future, according to the hypothesizing of Shapiro the field of HAS might diverge into multiple separate disciplines and fields, which poses the risk that animals would only be seen as tools in aiding human-centric goals, which would then end up in devaluing animals once more. He points out that challenges that the field will face in the future, will most likely be related to ones that the field already struggles with: “... *it is more challenging to study a relationship than a discrete entity, a relationship across species than within a species, and individuals of different species. It is also more difficult to develop methods that provide access to and verifiable descriptions of the experience of animals.*” (Shapiro, 2020, p. 25)

2.3 Conditions for Forming a Human-animal Bond

Animals are everywhere in modern society in one way or another; affecting our lives substantially and tangibly, but also more unnoticeably and abstractly. In their philosophico-historical article that takes a look at the difference between humans and animals, Kortetmäki and Slalov state that we define ourselves as humans by mirroring ourselves to our understanding of other animals (Kortetmäki & Slavov, 2012). So in order to study the essence of humanity we have to understand other animals also. Kortetmäki and Slalov continue to further explain that in western philosophy humans and animals used to be strictly separated in terms of intelligence, but they deem that this thinking substantially changed due to Charles Darwin's evolutionary theory and David Hume's naturalistic philosophical ideas that came before it. What Darwin and Hume agreed on, is how the essence of the character is not the greatest division between humans and animals, but that they are more separated by evolution. Kortetmäki and Slalov then point out that this way of thinking has affected how modern people view animal ethics, and has led to people opening their minds to the idea that humans' moral responsibilities should also be extended to animals. They highlight that what should be considered the most morally significant in terms of animals, is their ability to suffer, as well as how they experience life in general. Kortetmäki and Slalov continue in their article to define how peoples' philosophical relationship towards animals has changed throughout time, from antique to modern times. The most significant shift is from a human-centered way of thinking to a thinking that is more inclusive of other animals (2020).

In order for a proper human-animal bond to form, it should be acknowledged that an animal has inherent value, even without an interaction with a human. It is important that the animal also gains something that is beneficial to it, from the relationship.

2.4 The Significance of The Human-animal Bond

“Contemporary societal changes may account, in part, for the growing importance of pets. As lives have become more stressful and frenetic, pets offer relaxation and replenishment. With playful interactions, they bring their human companions into the carefree joy of the moment. Dogs and cats in particular give an abundance of pleasure; they generate whimsical humor,

curiosity, enthusiasm, and a sense of possibility. In uncertain times of global threats and financial insecurities, pets offer a comforting respite from life's storms.” (Walsh, 2009, p. 470)

Human-animal bonds are significant from several perspectives; in the everyday life of people e.g. with the health benefits it can provide, as well as within the scientific field of HAS.

Human-animal Studies

Based on our readings on human-animal studies it is clear that the connection between humans and animals has changed its form throughout history. In the past, people were closer to animals and nature in many ways, however the modern times have introduced new and in their own way significant types of connection. Several studies have been conducted, the understanding of the human-animal bond has gone through notable changes as new findings come out, and human-animal relationships develop to a multitude of new directions. Kenneth Shapiro goes over the past, present and future of human-animal studies as a field of science in his article. He highlights that the field views the world through a lens of how animals, and humans' treatment of them, influence our lives, often taking a critical stance at valuing animals for what they are (Shapiro, 2020).

The field of human-animal studies was born in the 19th century as a response to the animal protection movement in the UK and US. It soon included the study of relations with companion animals, and after WW2 animals' use in agriculture was included as well. More modern topics in the field of HAS include: the study of vegetarianism and “*More recently, in response to data on the dramatic reduction in wildlife numbers (Living Planet Report 2018, n.d.) and the “sixth great extinction” (Kolbert, 2016), studies increasingly address our relationships with wildlife, the strategy of rewilding, and human-wildlife conflict.*”(Shapiro, 2020, p. 9)

According to Shapiro there are four main frames that the field of HAS is presently focused on. Firstly elevating the animal being, which includes bringing the animal to the same level with the human and better acknowledging that several animals' have capabilities that only humans were thought to have, such as intentionality, plan making, anticipating the future and the ability to affect other beings and the environment. The second frame is lowering the

human being, in which research will be conducted to demonstrate that humans exhibit behaviours and have capabilities that only animals were previously thought to have. The third frame attempts to blur the distinction between humans and animals by pointing out that they both are mixtures of beings. The idea of hybridity is brought up as the replacement to the idea of distinct separate species; people and animals are all made of other tinier animals and microorganisms. The fourth and final frame is focused on the alterity theory, the idea that people can never fully know each other, and that this feeling of otherness is bound to exist in human-human relationships; HAS scholars propose that an animal can fill the role of this unknown other as well. *“The concept of otherness undercuts the perennial continuity/discontinuity debate regarding humans and animals, as it contends that no other being in a relationship, whether human or animal, is fully knowable.”* (Shapiro, 2020, p. 21)

As for the future, according to Shapiro the field of HAS might diverge into multiple separate disciplines and fields, which poses the risk that animals would only be seen as tools in aiding human-centric goals, which would then end up in devaluing animals once more. He points out that challenges that the field will face in the future, will most likely be related to ones that the field already struggles with: *“... it is more challenging to study a relationship than a discrete entity, a relationship across species than within a species, and individuals of different species. It is also more difficult to develop methods that provide access to and verifiable descriptions of the experience of animals.”* (Shapiro, 2020, p. 25)

Around the conclusion of his article Shapiro states, that considering the current state of the world (e.g. 6th great extinction, global warming, ocean pollution), humans have a vital duty towards animals. He signifies this by pointing out a 2018 study, that found a 65% reduction in land-based wildlife during the past 40 years (Living Animal Report 2018 as cited by Shapiro 2020), and then another study that the body masses of humans and domesticated animals put together now hugely exceed that of all wild animals (“biological proportionality”; Kalahari Lion Research, 2015 as cited in Shapiro 2020)

Health Benefits

Health benefits of a human-animal bond are both physical and psychological, as well as interconnected. There are several theories describing what these benefits are and how they take place. Social support theory suggests that companionship of others (people) is healthy

for humans, this could mean friendships, belonging to a group etc. (Lynch, 1977, 2000 as cited by Beck & Katcher, 2003). Animal companionship is also considered a form of social support, and is additionally known to increase human social support frequency (Eddy, Hart & Boltz, 1988 as cited by Beck & Katcher, 2003). The social support theory goes hand in hand with the theory of biophilia as well as the cultural understanding of human-animal bonds (Beck & Katcher, 2003).

There is a large variety of different psychological benefits in a human-animal bond. Owning a pet has been found to aid in coping with developmental disabilities (Martin & Farnum, 2002 as cited by Walsh, 2009) and mental health disorders eg. depression, anxiety, ADHD and schizophrenia (Barker & Dawson, 1998; Beck, 2005, as cited by Walsh, 2009). Walsh states that *“In part, interactions with pets alter the tendency of those with mental problems to focus negatively on themselves. They become more involved in their environment in non threatening ways with a companionate animal.”*(2009, p. 6).

The psychological and physiological health benefits of a healthy human-animal relationship, can be benefited from for example in a learning or a counseling setting, in animal-assisted learning- and therapy. Jane Wilkes lists in her book about the subject, several aspects which animals brought to a therapy setting e.g. the enhancement of therapeutic alliance/relationship, therapeutic environment and professional practice, along with the creation of a sense of sacredness (Wilkes, 2009).

Physical benefits of a human-animal bond can be observed in many ways in pet ownership. Walsh mentions in her article that research evidence shows that owning a pet lowers blood pressure, cholesterol levels as well serum triglycerides, and is shown to be a better reducer of cardiovascular effects of stress than even a friend or a spouse (Allen, Blascovich, & Mendes, 2002 as cited by Walsh, 2009). Walsh also lists a multitude of other physical benefits of pet ownership, such as positive impact on coping with chronic illnesses and easing the recovery from them (Walsh, 2009).

2.5 Child-animal Bond in the Context of Education

Interaction of animals and children can at best be very beneficial for all parties involved. However “While animals have always been present in children’s lives, today’s urbanization and industrialization have diminished the variety of such encounters.” as pointed out in a journal article by Tammi, Hohti & Rautio (2020). They also explain that among other things, such difficulties arise from the turning animals “into commodities and resources for human use.” Animals exist in childrens’ lives, but this might happen as a meatball on their plate or as a colorful character in a cartoon. Often if a child has direct contact with an animal, it is at a zoo or by owning a pet. Cultural differences are vast in this aspect, but overall there is a large estrangement happening between modern children and animals. Even if this is the case, multiple studies have come to the conclusion that pets positively affect children’s socio-emotional skills and overall well-being (Tammi, Hohti & Rautio 2020).

When a child interacts with an animal, there are several things to consider in order to maximize the safety of both parties. According to a 2008 study, children and especially children around 5 to 6 years of age, are generally more at risk to be attacked by a dog (Coleman, Hall, & Hay, 2008). Even if estrangement from animals is happening to children, owning a pet is still as popular as ever with the examples of 38.4 percent of U.S. households owning a dog and 25.4 percent owning a cat (American Veterinary Medical Association, 2017-2018); so besides all the other benefits of familiarizing modern children more with nature and animals, it would be essential for the sake of their safety in the interaction with their family’s pets.

Considering the role and significance of the human-animal bond in the society, as well as its numerous benefits, applying them to a school and/or educational context seems like a logical conclusion. However there are several things to take into account, for it to be practical or even feasible. This will be further discussed in the following chapter.

3. How does Animal-Assisted Pedagogy influence the development of social and emotional skills and the motivation of learning?

Throughout the past, the human-animal bond has offered mutual benefits in many aspects, as it is mentioned in chapter one, also in the school environment. In this chapter, we will look into research and studies, which have focused on the effects of animals in the classroom and especially looking at the development of social and emotional skills and the motivation of learning of students.

3.1 Social and emotional skills

There is more and more research about the importance of social and emotional skills and that we as teachers can promote students' social-emotional competence through Animal-Assisted Activities (AAA). In the following chapter we will take a closer look on the findings of research about the influence of Animal-Assisted Pedagogy (AAP) on the social and emotional skills of students. We include studies which take different environments into account, like early childhood education, primary school and special education settings. Furthermore, different studies researched about different animals and their benefits as well as the disadvantages. The studies were conducted for example in the United States, Slovakia and Germany.

One of the factors that animals can influence are social and emotional skills. Social and emotional skills describe the communication and interaction between humans. Social and emotional (SE) skills “refer to the abilities to regulate one’s thoughts, emotions and behaviour” (Polan, Sieving & McMorris, 2013, p.4). They help to manage human emotions, perceive themselves and engage with others. The development of social-emotional skills at young ages is important because of many reasons, for example it helps children and young people to develop resilience to cope with difficulties. There are many challenges in school such as performance pressure, exclusion, or test anxiety and it is the responsibility of children's educators to give them the tools through fostering social-emotional skills, in order to deal with challenges. As a result the students maintain their individual mental wellbeing and being a part of the school community and the society (Polan et al., 2013).

According to Md-Yunus (2019) there is a strong correlation between social-emotional skills and mental health. The Children's Society (2008) reports that *"70% of children and young people who experience mental health problems have not had appropriate interventions at a sufficiently early age"*. The development of social and emotional skills affects peoples' cognitive behaviour and determines how they handle stress, build up relationships with others, and make choices. Due to that and with the development of resilience and responsibility students' motivation, their relationship towards teachers, peers and the school community improves (Md-Yunus, 2019). Based on the growing concern of the mental health of students and the research findings mentioned above, animals used in AAP could be a tool to develop social-emotional competencies and with that reduce mental health problems. For this reason we found it crucial to explore the effect of AAP on social and emotional skills.

3.2 Research about the influence of AAP on the development of social and emotional skills

Dogs supporting the social and emotional development in Early childhood education

To begin with we look into a qualitative collective case study by Roberts-Schneider (2016) in which she examined how three early childhood educators used therapy dogs (AAT) and viewed the support these dogs provided for the social, emotional, and behavioral development of children. Firstly, providing children with social and emotional support was the primary function of animal assistance in this study. The majority of the students who participated in the study loved being in the presence of the dogs and were personally influenced by the dog. While a few students were observed to pay less attention to the therapy animals and complete tasks on their own, the excitement and energy surrounding the animals was perceived as positive by the majority. During the observation in one classroom prosocial behaviors and positive interactions occurred multiple times. Furthermore, the animal's presence prompted disengaged individuals to openly communicate (Roberts-Schneiders, 2016).

Therapy dogs have proven to be advantageous when building a nonthreatening and nonjudgmental environment. Dogs do not judge, they love unconditionally, and they provide friendship (2016). During the observation, there was a child who actively searched for contact with the dog after a conflict with other students. The child laid beside the dog and

hugged him, to feel the security and the comfort of the dog's presence (Roberts-Schneiders, 2016). In that case, the interaction and the company of the dog enabled a situation where the student was able to let out his emotions and calm down. Creating an opportunity like this is especially helpful for students who are struggling to make and keep friends and might feel uncomfortable opening up to others (Roberts-Schneiders, 2016). An article written by Cirulli (2011) explains the same phenomena that particularly dogs can have a calming effect on children, because of their non-judgmental and non-threatening nature. Because of that, it promotes a safe atmosphere and a positive perception of a situation (Endenburg, 2010, Parish-Plass, 2008 as cited by Cirulli). Animals are able to help children to cope with stressful activities, measurable through decreased blood pressure and heart rate. The calming effect of the dog makes children more willing to engage with peers and adults. It has been observed that when a dog was introduced in the classroom, children paid more attention to their surrounding and their peers and increased the communication (Cirulli, 2011).

The influence of guinea pigs on social functioning

Similar effects were found in existing research in the Animal-assisted activities program with guinea pigs. The expectations of the integration of rodents in the classroom were increased social functioning, increases in social skills, and decreases in problem behaviors, as well as increases in academic competence (O'Haire, 2013). O'Haire ran an 8-week classroom-based AAA program looking at the social functioning of primary school children using the Social Skills Rating System (SSRS). SSRS is a rating scale to provide norms and is based on a large, national sample of boys and girls. It takes the teacher, the parents and the student into account and focuses on the social skills of children (Gresham, 2001). Teachers and parents perceived that children in the AAA program engaged in more socially skilled behaviors (2013). Additionally, the children showed fewer problem behaviors after the 8-week trial period, compared with their control group peers. Half of the teachers elected to adopt the guinea pigs following the AAA program, to maintain the perceived benefits of having an animal in their classroom (O'Haire, 2013).

Likewise, a study by Talarovičová (2010) observed the social behaviour of autistic children with and without a guinea pig in the classroom, and noticed an increasement of social interactions in five out of nine children. Interesting was that some children showed behaviour they never demonstrated when the therapeutic animal wasn't there: Children who rarely

socially interact with each other talked about the guinea pig and stroked it together. The presence of the guinea pig made it easier for four of the children to have contact with unfamiliar persons. It was visible that the inclusion of an animal into the classroom made a change for some students regarding the interaction between the students, other persons in the classroom and even in the families of the children (Talarovičová, Olexová, & Kršková, 2010).

Emotional support of a dog in a German Special Education School

In a similar way, Poppe (2011) has conducted her research in a German special education school but with the support of a dog and her focus lays on emotional and social development. The findings were collected through observation and interviewing the students and teachers. The researcher used her dog to collect data and visited the same classroom eight times. She demonstrated the findings with the example of one of the students. The student expressed that the dog is his best friend and based on the change of his behavior the dog was encouraging his social behavior. It was visible that the dog's presence was a reason for him to stay in the classroom, even when an uncomfortable situation, like a fight between students, appeared. In general, it was much easier for the student to stay calm and concentrate when he had physical contact with the dog (Poppe, 2011). Beetz, Uvnäs-Moberg, Julius & Kotrschal (2012) support the findings by saying that via a dog's presence and free interaction with the children the dog potentially promotes the establishment of a trusting student-teacher-relationship and probably further supports social-emotional and cognitive learning by reducing stress levels of the children (2012).

Beetz et al. (2012) research provides another explanation of feeling more secure and comfortable in the classroom, is the higher release of Oxytocin (OT), which increases by interactions with animals. Due to several studies Human-Animal Interaction (HAI) and OT are known to promote social interactions, to reduce stress and anxiety. The dog affected the student to calm him down and feel more comfortable in the classroom which argues for the major role of social bonds. OT is released via eye contact, but in particular, via pleasant tactile interactions which seem to play a major role in the OT-mediated decrease of stress levels. The OT system plays a major role in social bonds and has been documented by several studies (Beetz et al., 2012).

Poppe observed that verbal assault and damage to objects appeared rare. It seemed that the students cared about the dogs' well-being and they tried to empathize with him. It was known that the students had problems showing but also reading others' feelings. In contrast, the child felt it was easier to understand the feelings of the dog. Furthermore, the researcher observed that the students were able to remind the others that they are not behaving right towards the dog. Although it wasn't possible for some students to refrain from these behaviors themselves, the researcher valued this behavior as positive because they realized that certain things were not good for the dog (2011).

The students in Poppe's observations provoked the dog to show his emotional state because then it was possible to capture emotions nonverbally (2011). Roberts-Schneider points out that since dogs communicate nonverbal, children learn, also with the help of the teacher, to understand the cues and how to use them (2011). Talarovičová (2018) believes that especially nonverbal contact with a therapeutic animal may be a more understandable stimulus for an autistic child and that such contact may initiate changes leading to positive social contacts with other people (2018). And to know what a dog means you have to put yourself in the position of the dog and learn to read the signs. This competence helps children to understand others and improves their empathy (Miller, 2018).

An improvement of empathy toward animals and better integration of students in the class was also found in the study of Beetz (2013). Beetz conducted a study about the effects of the daily presence of one of three school dogs in a classroom of first-graders for 3 months in comparison to a control class. Of four children in the dog-class, who were identified as aggressive at the beginning of the project, two had improved noticeably, while there were no changes regarding the three aggressive children in the control-class. Overall, the researcher argued that the dogs improved the social climate and also helped to reduce aggression in some of the students. However, no improvement in social intelligence and sociability was found (Beetz, 2013). Stetina et al. (2011) investigated the impacts of learning emotion recognition, including anger, fear, disgust, joy, and grief from dogs more closely. Using a pre/post-test design, the researchers found that children not only had significant improvements in recognizing anger, fear, and disgust, but they also had a significantly faster emotion recognition response when working with a dog. Children and adults who spend time with the dog not only improved their recognition of emotion in dogs but also humans (Stetina et al., 2011).

Guinea pigs supporting children's emotion regulation

Animals supporting the regulation of children's emotions were also visible in the study of Miller (2018). He focused on the sense of school belonging through Animal-Assisted Activities. The primary school students expressed their positive emotions very clearly when it came to spending time with the guinea pig. One child said *"I come to the Guinea Pig Club and I hold the guinea pigs, it makes me feel happy"* (Miller, 2015, p. 215). Not only do they make the children feel joy and happiness, the guinea pigs support their emotional regulation. When they felt upset and sad the pets calmed them down and comforted them. A participating student in Miller's (2015) study explained *"That's what I usually do. When I'm feeling sad, holding the guinea pigs and stroking them"* (Miller, 2015, p.223). The participants also described how the guinea pigs influence the attitude towards school. After meeting the guinea pig, they went in a good mood back into the class (Miller, 2015). It shows that the children are actively searching for the contact and they connect the time with the pet with positive emotions (Miller, 2015).. One explanation for that is the released oxytocin, the phenomenon we mentioned earlier already. Furthermore, the bonds students have with their AAA pet are often meaningful and they help them to understand emotions such as love and friendship.

3.3 Research about the influence of AAP on the increase on the motivation of learning

The role of motivation in learning is very important. It is described as an orientation towards a goal and determines the effort, and the connectedness the students feel to the activity and as a result, affect students' learning outcomes. Rost (2006) emphasizes that teachers and educators should support a positive attitude towards learning, and with that comes an increase in motivation (Rost, 2006). Furthermore, social and emotional competences can be utilized to achieve goals, enjoy the learning process and persevere in the face of obstacles which also helps to sustain motivation.

Increased motivation through reading dogs

A good and common example of a tool to increase motivation in school is the use of reading dogs to support and motivate children to read. Hall (2016) points out that students sometimes have harmful experiences connected to reading, which can lead to reading anxiety. Positive experiences, for example reading with a dog, can help the child to overcome negative associations. The dog's presence helps the student to relax and feel more confident, the blood pressure decreases and they can be in a safe space. Moreover, it allows the child to read without any fear of being judged or pressured by comments of peers, teachers or parents. Building a positive relationship towards reading helps the motivation to rise. In literature it is stated that when the reading motivation improves also the reading performance improves (Hall, 2016).

Similar results were found in Fung's (2017) research about the effectiveness of dog-assisted reading programs for children with special needs. With the help of the dog an accepting environment can be created and the children can practice their reading skills without fear of making mistakes (Fung, 2017). Fung points out that in a canine-assisted reading program the positive reading environment encourages children's "*joint attention, reciprocal interactions and motivation*" (2017, p. 444). Paradise (2007, as cited in Fung, 2017) says that students in the experimental group with a reading dog showed among other things better reading skills, a more positive attitude toward schoolwork and a greater willingness to participate in classroom activities than students in the comparison group (Fung, 2017).

Promoting motivation in a concentration training with the help of a dog

Beetz and Saumweber (2013) researched the use of animals in special education with a project in which 14 children diagnosed with ADHD/ADS from the age 6 to 11 participated in a dog-integrated concentration training. Due to no existing control group it was rather difficult to confirm the effects of the dog, nevertheless, a motivational effect was clearly visible by the parents and the training leaders. The children participated regularly and with joy in the training, and the lack of this was often a problem in similar programs before. Also the cooperation between the children increased. This indicates that involving a dog had

specific benefits for the concentration training. The authors state that especially children who are tired of therapy or interventions the motivation may rise when an animal is a part of the programme (Beetz and Saumweber, 2013). According to Beetz three-factor model (Beetz, 2012 as cited by Beetz & Saumweber, 2013) in which she explains the main effects of dogs in pedagogy compared to non-animal-based approaches, the promotion of motivation and a positive mood is one of the three factors. Among other factors these are important to reduce negative attitudes and fears connected to learning but also reducing motivational disorders caused by the symptoms of ADHD/ADS (Beetz, Saumweber, 2013). A different study, conducted in a general school, found the same core outcomes of AAA. In the class where the dog was present, it showed significant differences in class climate, positive attitude toward school, and positive emotions related to learning (Reilly, Olusola & Erdman, 2020 as cited by Beetz, 2013).

Depending on what experiences children make during the learning process, the motivation can rise or subside for further tasks and learning possibilities (Miller, 2011). Miller (2011) observed that children are very excited and energised by their experiences with the animals and it was surprising how motivated they were to express this creatively. Children are curious and want to explore their environment to make sense of their world (Miller, 2011). According to Miller (2011), learning is enhanced by experiences which are surprising, exciting and those which build a positive emotional response in the child. Hence, there is research that found that a connection between animals and creativity exists. “*The engagement and enjoyment of observing animals at play is explained by the term Biophilia, used to describe children’s natural affinity for animals and nature*” (Kellert & Wilson, 1995 as cited in Miller, 2011, p.157) and is described in more detail in the first chapter (Miller, 2011).

4. What are the Limitations and Ethical Considerations in Organizing Animal-Assisted Pedagogy?

In this chapter, we seek answers to the practicalities of Animal-Assisted Pedagogy (AAP) through the research question: *“What are the limitations and ethical considerations in organizing Animal-Assisted Pedagogy?”*.

To form an understanding of organizing Animal-Assisted Pedagogy and its challenges, we take a look into how AAP is organized by identifying the exercises and activities common to AAP, as well as, discuss the planning and documenting of AAP from a critical point of view. Finally, we explore the limitations and ethical considerations of organizing AAP, in regards to limitations in the school environment, allergies, and wellbeing of both children and animals. With this chapter, we hope to raise some critical views on the reality of AAP, thus considering what it takes from an educational facility or an educator to practice AAP in their classroom.

4.1 Organizing Animal-Assisted Pedagogy

Organizing animal-assisted pedagogy in practice has many enticing opportunities, however, certain considerations should be made to ensure the activities’ pedagogical nature. Here, we explore the kinds of exercises possible and common in Animal-Assisted Pedagogy and discuss the planning of Animal-Assisted Activities in an educational setting.

Exercises

When studying AAP we perceived that the possibilities of different kinds of exercises, activities, and practices with animals in education are as diverse as the kinds of animals that could be a part of it. Even though these possibilities could be endless, Animal-Assisted Pedagogy in practice is quite homogenous. As expressed in the introduction of this thesis, most of the literature and studies we found about AAP were only about dogs, thus they seem to be overwhelmingly the most common animal used in education. The activities you can do with an animal in an educational setting are perhaps most versatile when done with dogs. As

demonstrated also in Chapter 3 of this thesis, dogs can be present with students in many situations. They can encourage students to read, demonstrate a movement, roll a die, offer affection when a student is feeling sad, or calm down a situation. A dog's presence brings joy to learning in many ways, and its participation is very much an active one.

In her guidebook to Animal-Assisted Interventions, Kahilaniemi has demonstrated many Animal-Assisted Activities in which dogs can help with multiple different areas of learning. *Motoric skills* can be practiced by playing football, chopping treats for the dog, or repeating a movement after the dog, such as crawling through an agility tunnel. *Psychological and social skills* can be developed with exercises of trying to understand a dog's expressions and movements to what they could be feeling. Manners can be practiced by introducing yourself to a dog and shaking its paw. A dog can help with developing *cognitive skills* by rolling a die for a calculation or by reading with the student. *Sensory skills* could be exercised by grooming the dog or painting a portrait of the dog (2016). Similar exercises can also be done with more passive animal assistants, such as guinea pigs, whose cages can be cleaned, their food prepared or they can be groomed and pet (O'Haire, 2014).

In the Finnish context, the most common and known form of Animal-Assisted Pedagogy is the "reading dog" -activities. The Finnish Kennel Club describes reading dog activities as such:

"Reading for a dog can inspire one to read. A reading dog's job is to listen to the reader and be present. The dog doesn't judge or point out if the reader makes an error, is slower than others, or hesitates. The dog's presence relaxes the reader and relieves anxiety." (kennelliitto.fi, n.d.).

Reading dogs are common in libraries and schools all around the country, with the first library beginning the activities in 2011 (ouka.fi, n.d.). The aim is to encourage reading as a hobby, as well as give a positive reading experience to the child. Reading to a dog has also been found to help dyslexic children with reading (ouka.fi, n.d.).

Planning

Most activities happening in a school environment are carefully planned to ensure efficiency and purposefulness of teaching - however when it comes to Animal-Assisted Pedagogy

(AAP), and more specifically Animal-Assisted Activities (AAA), there seems to be a contradiction that may affect the way educators and instructors of AAP feel AAP-related activities should be organized. This contradiction becomes apparent in the definitions of the terms. As expressed in our introductory chapter of this thesis “*1.2 Definitions of Animal-Assisted Pedagogy*”, AAA is defined to be something spontaneous and unplanned. This is not something that can be done in an educational setting, especially when there are animals involved. Animal-Assisted Therapy (AAT) on the other hand fits more into what teaching and education are, as it is defined as always carefully planned and having aims for a tracked process of an individual or a group to reach the goals of said therapy. AAT thus seems more pedagogical, however by the definitions of these terms as well as the observations we made from the literature, AAAs seem more in line with what is done in classrooms in practice (such as reading dog activities). The same contradiction applies also to documenting the activities and the participants' progress in the activities, however from a pedagogical point of view - and also in regards to the evaluation of learning - documenting the students' progress seems to be an important and necessary step regardless of the nature of the animal-assisted intervention.

In the context of Finnish education, all teaching must be planned based on the Finnish National Core Curriculum and the school's local curriculum in order to ensure equality, high quality of teaching, and that the learning conditions are favorable to the pupils' learning and development (Finnish National Board of Education, 2016). In addition, guidelines for Animal-Assisted Interventions (including AAP, and thus AAA and AAT) note that the quality of such interventions may be ensured by careful planning and setting aims for the activities (Kahilaniemi, 2016). Planning should include considerations of laws (such as laws of education, child welfare, and animal welfare), ethical considerations, and curriculums (Kahilaniemi, 2016). Awareness of risks and precautions should be discussed with the students, and proper rules and hygiene should be set to ensure the safety of both the children and the animal (CDC, 2020).

4.2 Limitations and Ethical Considerations in organizing Animal-Assisted Pedagogy

Limitations in the school environment

Bringing an animal into the school requires a significant change in the working environment. Kahilaniemi, in her book on Animal-Assisted Interventions, has listed guidelines for animal-assisted practices in the work environment. She emphasizes that proper consultation with the whole work environment, as well as the families of the students is needed. It should be discussed how allergies are taken into account to create a safe and pleasant experience for all. Clear rules and instructions are essential to minimize possible dangers that could arise from ignorance of when and how to encounter the animal. These rules could include calm behavior around the animal and respecting the boundaries of the animal. Hygiene and cleanliness of the working space and the animal are important in preventing illnesses and allergy symptoms (2016). In addition to this, working with an animal requires a basic understanding of animal behavior as well as the interactions between a human and an animal in order to recognize when the animal is stressed or uncomfortable (Allen & Colbert, 2016). The key seems to be ensuring the wellbeing of all parties, (the animal, educators, and students) results in positive and safe experiences for all.

Allergies

Allergies to animals may prevent AAP activities, as students or educators with strong reactions to animal allergens cannot work with the animal. While animal allergens are all around us at all times as many have pets at home, the amount increases when the animal is brought to the same space (Allergy, Skin and Asthma Federation, 2019). In Finland, house pets, (such as dogs, cats, rodents, and reptiles) cause allergic reactions for 15% of the population (Vuorenmaa, 2020; Allergy, Skin and Asthma Federation, 2019). Some animals, such as fish cause little allergic reactions, while cats and dogs cause the most reactions (Allergy, Skin and Asthma Federation, 2019). Dogs are the most common animals used in AAP, and while there is no hypoallergenic dog breed, the number of allergens that the dog sheds is different in different breeds (Valovirta, 2013). Proper and enhanced hygiene of the animal, as well as cleaning of the working space, may decrease exposure to the allergens and

relieve allergic reactions to the animal (Green et al. 1996). These enhancements may include washing and grooming the animal frequently, checking the animal's mouth and teeth in case of infections, checking the animal for parasites (such as ticks), disposing of the animal's feces appropriately, and practicing proper hand hygiene (Kahilaniemi, 2016).

The Finnish Allergy, Skin and Asthma Federation urges schools working with dogs to recognize how allergies may affect the children involved. They emphasize that it must be ensured that the student is able to learn in the school spaces. If some student has an allergy to the animal, the animal-assisted practices cannot be implemented in the classroom. Cleaning and ventilation of the spaces must be taken care of in case a student with an allergy enters the space later. It must be also planned how allergy symptoms should be treated and what happens if someone becomes allergic or is affected by the animal, for example by difficulty of breathing (2020).

Allergies to animals can affect all parties: educators, students, and the families of both educators and students. In a study by Sokal (2019), childcare educators reported allergies to be the most important drawback of having animals in the childcare center. In addition, allergic reactions were the most common incident and concern to be expressed by the families of the children. 54% of the responders also reported that their facility has children who are allergic to animals (2019). The results of Sokal's study are interesting as they show that allergies are the biggest concern for both educators and the families of the children. Similar results could be assumed to appear from a school environment.

The well-being of the student

To minimize risks in AAP activities, the students working with the animal must be taught and demonstrated how the animal should be treated and handled. This also requires that the educator knows the limits of the animal and what kind of interaction is acceptable or harmful (Allen & Colbert, 2016). Jegatheesan (as cited in Allen & Colbert) describes inappropriate human behaviors towards an animal to include, for example, jumping and bending over animals, pulling the tail or ears of the animal, and sitting on the animal (2016). In addition, in the previously mentioned study by Sokal, children hurting the animals was the second most common incident to be reported to happen with the animals in a childcare center (2019).

The choice of animal is also extremely important for the health and wellbeing of the children. It must be noted that even though the educator has a well-behaved pet at home, it may not be suitable for working with multiple children in a new setting (Kahilaniemi, 2016). The choice of animal is also affected by other precautions, such as the health and health care of the animal, which largely lowers the risks of allergy, zoonosis (infectious diseases, such as rabies or salmonella), and injury in an interaction between an animal and humans (Fine, 2015; Kahilaniemi, 2016).

In *The Handbook on Animal-Assisted Therapy*, Aubrey Fine addresses allergies and fears in regards to Animal Assisted Therapy as such: “*ensure that the addition of the animal will not complicate the therapy*” (2015). This could also be said about AAP in a school setting. AAP should (also by definition) enhance the well-being of students, and not cause physical or mental harm to any party. We noticed that although many authors and researchers emphasize being aware of the fear of animals in implementing animal-assisted interventions (including AAP), there seems to be little literature on answers of how such fears have been addressed, for example in a classroom situation. We were left with further questions, such as “how do fears or allergies affect AAP in practice?”, “will the students with fear or allergy be offered an alternative or should these feelings be worked with to enhance the participation of the student to AAP tasks?”, and “what is the ethical solution in these cases?”. These questions could be explored in future research.

A consideration that may be left unnoticed is one that is heavily connected to the human-animal bond explored earlier in Chapter 1 of our thesis; the loss of the animal either by sickness or death of the animal, or retirement from work. Students may experience strong attachment to the animal and as instances like this occur often unplanned, the educator must be aware of them, for example, how will the educator explain the animal's illness, death or inability to work to the children who may be attached to the animal and eagerly waiting to interact with it again (Fine, 2015). Should and how should the educator replace the animal-assistant? How should involving a new animal in the activities be approached? (Fine, 2015). In our discussions, it was brought up that in an unfortunate event like this where the students have to separate from their beloved animal-assistant, the possibility of growth in learning about loss and separation from a friend could be addressed. This was not talked about in the literature, however, we saw it as an important part of the human-animal bond and its practicalities in an educational setting.

The well-being of the animal

For the safety of all parties involved in Animal-Assisted Pedagogy, the wellbeing of the animal must be cared for. The animal must be well-behaving, suitable for the activities, and tolerant of situations where there are different kinds of disturbances (Kahilaniemi, 2016). The animal must be trained appropriately with basic training, and it is recommended that the animal attends an aptitude test before starting to work as an assistant (Kahilaniemi, 2016). The instructor is responsible for ensuring that the animal has been trained with positive and safe methods (Kahilaniemi, 2016).

The health of the animal must be checked before beginning working and it should be monitored regularly and consistently (Kahilaniemi, 2016). The animal needs appropriate working conditions and space depending on its species, and the instructor has a great responsibility in learning about the species of the animal in regards to its behavior and needs (Kahilaniemi, 2016). The animals shall also not be neglected even if the species of the animal is more low-maintenance. Two of the most common types of animals in childcare centers, fish and small rodents, are often found to be the most neglected ones (Serpell et al. as cited in Sokal, 2019). Animals that live in the facility are also more stressed than animals that visit or only work in the facilities (Serpell et al. as cited in Sokal, 2019). Thus the educator must be able to recognize when the animal is stressed or tired (Kahilaniemi, 2016). The learning environment should offer the animal enough stimuli and a safe space for the animal when it wants to rest and be left alone, and if possible, for the comfort of the animal, it should be free in the working situation (Kahilaniemi, 2016). Outside of work, the animal should be allowed to rest and recover sufficiently (Kahilaniemi, 2016).

A study by Glenk et al. (2013) examined the cortisol levels of dogs in Animal-Assisted Intervention situations to see whether they experience stress in such situations and how their working conditions may be improved. They found that the dogs were not stressed from working in Animal-Assisted Interventions, however, there were findings that indicate that the dogs should be free to move in order to keep their stress levels low (Glenk et al., 2013). Being stressed affects animals' health significantly and may lead to unpredictable behavior which could risk the safety of both humans and the animal (Seksal, 2014).

5. Discussion

Our thesis sought better understanding of Animal-Assisted Pedagogy through exploring three research questions:

1. *What is the human-animal bond, and what is its significance?*
2. *How does Animal-Assisted Pedagogy influence the development of social and emotional skills, motivation of learning and wellbeing of students?*
3. *What are the limitations and ethical considerations in organizing Animal-Assisted Pedagogy?*

In the second chapter we sought to define what the human-animal bond is and what its significance is. We found that the human animal bond is a mutually beneficial relationship that can occur in many different ways with several variables that define it further e.g. socioeconomic status of the human and species of the animal. Human animal bonds have changed their form throughout the years, but their contemporary significance is clear: a human-animal bond can provide great comfort and companionship to both parties and for humans, an increased connection to nature. Valuing animals for what they are, and recognizing that many abilities which were thought to be only possessed by humans can also be found in a multitude of animal species, is essential in studying the human-animal bond more thoroughly and with better integrity. In AAP, the knowledge of human-animal bonds and their significance is a fundamental step in building an atmosphere of ethical and fruitful education.

In the third chapter we explored the effects of animals on the social and emotional skills and the motivation of learning. The research findings offered us an insight of Animal-Assisted pedagogy in different institutions with different purposes and approaches. They strengthened our belief that it is important to acknowledge the huge influence of animals in pedagogy, the feelings and actions they can evoke in students and that they support the social and emotional development and with that supporting mental health and wellbeing. Furthermore, they can be a factor to sustain motivation. With the positive view in this chapter, it is visible that students often make similar and good experiences when an animal is implemented in the classroom. Nevertheless, as crucial it is to see the benefits of AAP regarding the social and emotional

development and students motivation, just as important are the limitations and ethical considerations.

The fourth chapter observed the limitations and considerations in organizing AAP. Through studying these topics it became apparent to us that there is a growing amount of considerations and responsibility that an educator must come across in their practice with the addition of AAP. Organizing AAP is not easy, and it seems that for the benefit of all, the whole school community must be prepared and consulted for the morality and efficacy of AAP in education. According to the findings in this chapter, it can be observed that in addition to the many responsibilities of a classroom teacher, an educator pursuing AAP has to have an understanding of the animal in question, the risks that the animal's presence brings to the classroom, and providing this information also to the students involved. The school also must have enough resources to provide a suitable space and care for the animal. Whether these factors limit the use of AAP seem to depend on the resources, possibilities and interest of the specific educator and school considering AAP in their practice.

As it may be observed in the concluding answers to the research questions above, each research question required different approaches in investigating the themes, as the nature of sources varied between them. Challenges arose in both finding and reading the source material, as well as writing about AAP, as the terms used about and under AAP varied. The animal-assisted practices seem to remain quite new and unexplored in educational research and literature, thus possibly impacting clarity on what AAP essentially is. Later in this discussion chapter we will discuss ambiguity of terms in the matter of how it may affect the teacher's planning process and ethical considerations of AAP.

Overall, throughout in writing this thesis we were eager to find out how our views of AAP would change along the way. The biggest question in our mind to be discussed at the end of this process was the reality of AAP and whether it is clear and possible for an educator to pursue in their practice. In this chapter, we shall discuss issues related to the reality of AAP, as well as, questions we felt could be answered in future research.

5.1 Reality of Animal-Assisted Pedagogy

Ambiguity of terms

The clarity of how things should be organized and arranged from an educators point of view is something that in the end affects the practices of AAP and the ethics related to it. Thus, the definitions and terms we use to describe such practices should be clear. As already briefly discussed in Chapter 4, there seems to remain a contradiction in the definitions of terms, leading to ambiguity to the definition of Animal-Assisted Activities when it is placed under AAP.

Animal-Assisted Activities under Animal-Assisted Pedagogy require planning, aims, and professionals in order for the activities to be pedagogical. Spontaneous and unplanned activities would be difficult to arrange in a school setting due to different considerations, such as the working space or allergies and fear of some animals. This could be also seen as unethical. The ambiguousness of the term Animal-Assisted Activities especially under the term “pedagogy” could be seen to reveal ambiguousness also in the practice. We wonder if educators have a common idea on what these terms mean and how the activities should be organized especially from an ethical standpoint?

As the phenomenon of using animals as pedagogical tools is fairly new, the terms may not be as developed and researched. This could lead to some problems with considerations of AAP and the planning of such activities. Our hope for the future of AAP is that the increasing literature and research would stabilize the use of the terms and their definitions to be more unified and clear.

Resources

As discussed in Chapter 4 of this thesis, AAP requires many considerations in order to work efficiently and ethically. One big question is: how many educational facilities and teachers have the resources to provide appropriate space and care for the animal? Most often the animal assistant is a pet of the educator working with it, possibly because issues of care are

taken care of by the owner of the animal. Regardless, the animal still needs their space in the working place depending on the needs of its species. Animals living in the facility require caretakers that are willing to care for the animal consistently and properly.

In addition to issues of space and care, the educator must have time to find out if there are allergies or fears among the group/school, inform and educate people working and studying in the school on handling the animal, and plan and prepare the animal-assisted sessions carefully. This may be a large workload to take on in addition to other responsibilities of an educator. This of course depends on the individual educator, however we feel it is safe to assume that many educators would feel that there is not enough internal and external resources to practice AAP in their classroom.

Taking into account the resources needed to provide efficient and ethical AAP, we wonder what kind of schools would be able to implement it. In our context, Finland, there are only a couple of private schools and the funding is handled by the same financing system as in the municipality public schools (Ministry of Education and Culture, n.d.). Thus, we are left with the question of whether even the few private schools have any advantage in funding AAP.

The Beneficiality of AAP

As already discussed in this chapter, implementing AAP into education may be a large workload to tackle for both educators and the educational facility. This workload made us wonder whether the benefits of AAP are worth the workload.

In Chapter 3, we explored the benefits of AAP through social and emotional skills and motivation. Through investigating the research related to the benefits of AAP, we concluded that it is worth considering the support of an animal in educational environments as long as considerations are made and the staff is well educated on the subject. We came to the conclusion that beneath all the workload and the possible obstacles, animals can enrich children's social and emotional development and help us teachers to support the students' development in the best way possible. We found that the emotional support, the encouragement of interaction and the fact that students feel safer and the stress level decreases are compelling reasons for Animal-Assisted Pedagogy.

As some of the studies reviewed in Chapter 3 were conducted in special education classrooms, we pondered whether there is a difference in benefits of AAP between special education classrooms and general classrooms. The students have different needs and difficulties in special education classrooms than the students in general classrooms, which could reveal an increased need for something like AAP to provide support for the students. This could also relate to the issue of resources to provide AAP, as animal-assisted methods could be concentrated to those who need it the most if there are not enough resources to provide it for all. In terms of benefits, it could be that students with special needs could need an animal assistant more. However, for example in the context of Finland, inclusion is increasing rapidly and the amount of special education classrooms are becoming less, thus students with special needs are included into general classrooms. On one hand, the support of an animal-assistant could be a key to improve inclusion in the classroom, and on the other hand inclusion makes it more difficult to reach these students, as the students around them might have allergies or fears of the animal.

Thus the beneficiality of AAP also made us think about the limitations of AAP discussed in Chapter 4. How many students must have allergies or fears of the animal before it is decided that AAP is not beneficial in the classroom/school? Is one student enough? Allergies and fears are not uncommon, and many classrooms have more than one student with allergies or fears to the animal. It would be interesting to find out how these instances have been handled from cases of AAP being practiced in a classroom. While we did not find the answers to these questions for this thesis, we are hopeful that the literature and research on the topic in the future will reveal some answers to these issues.

5.2 Questions for future research

In the process of writing this thesis, we were left with some questions that we want to find the answers to. We find it especially intriguing to find out more in the future about real life cases of AAP happening in a classroom, possibly in Finland. By learning from cases, we would get answers to why and how AAP was started in the specific case, how it was arranged, what benefits and challenges arose, and how limitations were dealt with. In the literature reviewed for this thesis, issues, such as addressing fears and allergies to animals were mentioned in

various sources, however no concrete explanations of how to overcome these issues were talked about. By understanding cases of AAP, we are certain that some ideas and solutions could be found to these dilemmas. Thus, we look forward to the possibility of exploring these questions in our Master's thesis.

6. Conclusion

This thesis explored Animal-Assisted Pedagogy (AAP) through the human-animal bond; benefits of AAP on social and emotional learning, motivation and wellbeing; and limitations and considerations in organizing AAP.

It was found that the human-animal bond is a basis on which healthy human-animal interactions such as AAP can happen. There are several psychological and physiological benefits to a human-animal bond, which can be seen in fruition throughout time and in several aspects of our contemporary lives. Human-animal bonds are significant and present in society, but in constant change. The way in which a human-animal bond is realized, is dependent on several factors, such as the socioeconomic status of the human and the species of the animal.

Regarding the benefits of AAP, it seems that animals have a huge impact on children's social and emotional skills and the motivation of learning. The development of these are supported by the comfort of the animal's presence, and by enabling positive experiences and interactions. Good social and emotional skills help the students to maintain their mental health and preserve healthy social relationships.

Lastly, the limitations and considerations in organizing AAP showed that practicing AAP requires a large workload. This could be seen in terms of increased responsibilities for the teacher implementing AAP, as well as, the resources the educational facility is able to provide for proper care of the animal and safety of students. It is questionable how many schools are realistically able to implement AAP into their education.

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