



Practitioner Researcher

Supporting children’s social and emotional development through pets in the ECE context

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This article explores the concept and benefits of the relationships forged between children and animals. It builds on Edward Wilson’s biophilia theory, in which he considers children to be born “hardwired” with a natural predisposition and attraction towards animals (Melson, 2001). Animals can offer children the feeling of security and comfort, providing a friend to bond with in the early childhood context, enabling children to feel secure and confident to explore their early childhood environment (Frieson, 2010; Zilcha-Milano, Mikulincer & Shaver, 2011). In particular, this article explores how animals can be used by teachers as a pedagogical tool to support children’s learning and development, especially children’s social and emotional development.

Introduction

This article explores the concept and benefits of the relationships forged between children and animals. It builds on Edward Wilson’s biophilia theory, in which he considers children to be born “hardwired” with a natural predisposition and attraction towards animals (Melson, 2001). Similarly, Beetz, Uvnäs-Moberg, Julius and Kotrscha (2012) have found that animals can positively influence children’s social emotional development. Overall, the literature reviewed in this article appears to highlight the positive effects that animals, particularly dogs, have on children’s social behaviour (Beetz et al., 2012; Prothmann, Bienert, & Ettrich, 2006; Prothmann, Ettrich, & Prothmann, 2009). Animals can offer children the feeling of security and comfort, providing a friend to bond with in the early childhood context, and enabling children to feel secure and confident to explore their early childhood environment (Frieson, 2010; Zilcha-Milano et al., 2011).

Why use animals as a pedagogical tool?

Animals’ and children’s lives have been intricately woven together throughout history (Melson, 2001). It has been noted that many early childhood and day-care centres are emulating the home environment through the extensive use of animals within their programmes internationally (American Humane Association, 2015). It is a common occurrence within the early childhood context to see fish in aquariums, rabbits or guinea pigs in hutches and other small mammals kept in safe enclosures (Uttley, 2013). Often, these animals and animals in their natural environment spark children’s interests, providing motivation and a catalyst for children’s further inquiry based learning (McCartney & Wadsworth, 2014). Teachers use animals as diverse pedagogical tools to increase children’s environmental awareness and stewardship, enhance cognitive development, and provide social emotional support (Beetz et al., 2012).



For young children in westernised cultures, animals play a significant role in forming a culturally symbolic cast of characters in books, television, movies, realistic or virtual pets, offering companionship, friendship and comfort (Melson, 2001). However, for many children from indigenous cultures the link with animals holds a spiritual dimension (Harvey, 2005). For example, in the indigenous Māori culture of Aotearoa/New Zealand *mauri* is considered the breath or life force which animates all things in the physical world. Animals, abstract and real, act as what Vygotsky describes as pedagogical tools and cultural artefacts, for children to explore facets of themselves and their cultures (Bodrova & Leong, 2007). Further, some theorists state that animals can become attachment figures for children. For example, extending Bowlby and Ainsworth's original theory on attachment, Zilcha-Milano et al. (2011) suggest that animals can become attachment figures for children similar to their human counterparts. This perspective is shared by Levinson (1997), who claims that animals are a natural object of attachment, offering a safe haven for non-judgmental affection, companionship, support and comfort.

Benefits of children - animal interactions

Preceding the research conducted on interactions between animals and children is the work of Boris Levinson (1997), who might be considered the father of animal therapy. Following Levinson, a large body of research has been conducted on the perceived psychological benefits of relationships forged between children and animals. In particular, studies have focussed on and found that animals positively influence children's social emotional development (Beetz et al., 2012). A meta-analysis of child animal intervention research highlights the benefits in particular for children with autism spectrum disorder and attention deficit disorder, possibly correlating with the psychological roots suggested by research on animal child interactions (O'Haire, 2013). Overall, as mentioned above, literature appears to highlight the positive effects that animals, particularly dogs, have on children's social behaviour (Beetz et al., 2012; Prothmann, Bienert, & Ettrich, 2006; Prothmann, Ettrich, & Prothmann, 2009). Notably, studies show that the presence of dogs within education contexts have positive effects on social behaviours displayed by children such as aggression, concentration and physiological stress (Beetz, 2013).

The development of children's strategies to begin to regulate emotions and behaviours is considered a key achievement within the early years in order to facilitate executive processes or habits of mind (Arthur, Beecher, Death, Dockett & Farmer, 2005). According to Arthur et al., executive functions include concentration, motivation, memory, cognitive flexibility, problem solving and strategic planning. One of the key learning outcomes for *The New Zealand Early childhood curriculum Te Whāriki* (Ministry of Education, [MoE], 1996) is the development of children's learning dispositions or habits of mind, where children combine knowledge skills and attitude to become ready, willing and able to learn. This is explained, through the lens of a biological perspective, by research conducted by Beetz et al. (2012) and Heinrichs, Baumgartner, Kirschbaum, and Ehlert (2003), who propose that animal interactions increase levels of oxytocin; reduce cortisol production (a stress hormone), thus reducing stress and anxiety; and promote increased social interactions.



Beetz (2013) provides further evidence that shows that animals significantly reduce times of stress, especially during transition times, leading to children's improved social interactions, thus contributing to an overall better social environment (Beetz, 2013). Uttley (2013) illustrates this point, explaining that one participant teacher in a survey conducted to explore the use of different animals in educational settings used, for example, an iguana "Iggy," who loved being fed green grapes, to support a child who was experiencing separation anxiety. The child began feeding Iggy grapes when she said goodbye to her mother. This activity enabled the child to become an active confident member of the centre as she mastered simply saying goodbye to her mother at the door as she eagerly went to feed and see her scaly friend (Uttley, 2013). This shows that animals can offer children the feeling of security and comfort, providing a friend to bond with in the early childhood context, enabling children to feel secure and confident in their early childhood environment (Frieson, 2010; Zilcha-Milano et al., 2011). Although it needs to be mentioned that, according to Friesen (2010), these benefits do not manifest themselves in children with phobias regarding animals.

Arguably the most common elements of existing research conducted on child-animal interactions focus on the social emotional benefits from a therapeutic perspective. The use of animals as a pedagogical tool moves away from this treatment type model towards a pathway to empower children's learning and development. However, there appears to be little research that specifically investigates the positive effect animals can have on pre-school children's learning. Although a number of anecdotal articles exist that document animals being used as pedagogical tools to supporting children's learning and development, unfortunately many of them tend to lack validity and rigour (Meadan, & Jegatheesan 2010; Stone, 2010). A series of studies on pre-school children, such as Harris and Johnson (2007); Gee, Sherlock, Bennett and Harris, (2009); Gee, Church and Altobelli, (2010a); Gee, Crist and Carr, (2010b) can be found, which explore the effects of the presence of a therapy dog on the performance of several tasks carried out by pre-schoolers. They largely found that children were better able to perform executive functions, adhering to instructions and making fewer errors in categorisation tasks with a therapy dog present. However, O'Haire, McKenzie, McCune and Slaughter (2013) highlight the fact that dogs are not commonly used in early childhood contexts. Further research is required to explore the specific impacts of commonly used animals in the early childhood context.

Animals as a pedagogical tool

The notion of pedagogical tools probably has its origins within the socio cultural framework, where cultural tools and signs were first discussed by Vygotsky as the primary ways in which the individual and social contexts become intertwined. Signs and tools are first experienced by the child on a social plane and after time become internalised on a psychological plane acting as regulators of the child's behaviour (Bodrova & Leong, 2007). As discussed above, animals are suitable pedagogical tools to support this process, as they help children to internalise self-regulatory behaviours.

However, the teacher's decision to utilise a pedagogical tool, according to some research, shows that it is highly reliant on the teacher's prior knowledge, culture, beliefs, experiences and training (Leko & Brownwell, 2011). The extent to which



a teacher uses a pedagogical tool depends on how well it aligns with the teacher's ideologies (Leko & Brownwell, 2011). From a socio cultural perspective, the incorporation of a pedagogical tool can also be constrained by the social cultural context in which the teachers practise is embedded (Siraj- Blatchford, 2004). Therefore, in order for teachers to adopt animals as pedagogical tools, according to Fredrickson-MacNarmara and Buler (2010), relies on their prior experiences with animals. Surveys and interviews conducted by the American Humane Society (2015) with 1131 teachers across America using both open ended and closed questions confirms that 90% of teachers who included animals in their education environments had animals at home. Although not all teachers share this enthusiasm for animals in the education context, instead concerns are voiced that animals are becoming mere objects of scientific inquiry, lost and forgotten about in the bustle of the educational context rather than becoming beloved members of a family (Melson, 2001).

How are animals used as pedagogical tools?

The three most common uses of animals within the educational context found by the American Humane Society (2015) survey were to encourage children's responsibility and leadership skills, and to provide a calming influence for children in times of stress or during periods of unstable behaviour. Animals were especially used to support children with autism spectrum disorder and enhance learning in science and nature. The survey further confirms findings of other studies in which teachers reiterate the top three benefits of including animals in educational settings as being improvement in children's social interactions, behaviour and participation.

According to Beetz et al. (2012), the incorporation of animals within the education context affects the entire social atmosphere, supporting improved social interactions between children and the creation of a community of learners. The fact that animals often act as catalysts and lubricants for social interactions more than likely contributed to these findings (Levinson, 1997; Melson, 2001).

Animals can be incorporated as pedagogical tools within the early childhood context in a variety of ways: as full time residents, as visitors to the centre, or children can visit them. In an innovative research study, McCartney and Wadsworth (2014) used the notion of creating an environmental playground where children learn to interact with pets and wildlife in the natural environment. Environmental playgrounds are especially designed to represent the surrounding areas and natural habitats of animals to encourage children's inquiry learning, collaboration, exploration and support children's scientific skill development such as observation, developing working theories and problem solving. In this study by McCartney and Wadsworth, the environmental playground included ecosystems for turtles and butterflies and naturally occurring bugs and beetles. Habitats were also co-constructed with children for dogs, parakeets, rabbits, guinea pigs and hamsters. Findings from this study showed that the benefits of an environmental playground include several themes such as children's increased interest in animals, caring and responsibility behaviours with animals, concrete experiences illustrating conceptual themes and increased self-esteem. Although the findings from this study lack generalisability, the multiple data collection methods used provide some credibility of the findings. The findings from this study reiterate Vygotsky's theoretical perspective that an environmental playground provides a



rich authentic context for children to learn from hands on active exploration of their environment. Combining children's natural curiosity with animals provides a powerful pedagogical tool building children's self-concepts, science skills, providing opportunities for children to develop sensory, physical, emotional, intellectual and social skills. This resonates with *Te Whāriki*, which states that the incorporation of animals within the early childhood context enriches children's learning experiences, providing meaningful links with people places and things within their community (MoE, 1996).

According to two surveys, the by far most common animal found within the educational context are fish (American Humane Association, 2015; Uttley, 2013). A possible explanation for this is that, as one participant stated, fish are easy to care for and children responded well to them. Other animals included in educational settings were frogs, lizards, guinea pigs, hamsters, bearded dragons, and geckos (Uttley, 2013). According to O'Haire et al. (2013) guinea pigs are ideal animals for young children and inclusion into educational settings as they are easy to look after, are diurnal, they find handling pleasurable, and rarely bite.

Excursions and field trips to visit animals are also commonly used within the early childhood sector to enrich children's learning. Studies by Štefaniková and Prokop (2015) showed long term effects on participants as many recall it as an unforgettable experience and one that influenced their continuation of study into the field of biology. A further study by Hedges (2004) confirms these findings, as children who participated in an excursion to visit sea creatures showed similar long term effects and children were able to recall facts many weeks after the event.

However, teacher surveys also show that there are some challenges when introducing animals into the education context. The most common areas of contention found in two surveys were identified by teachers as funding support for the animal's lifetime, caring for the animal after centre hours or holidays and managing children's interactions with animals (American Humane Association, 2015; Uttley, 2013). Literature further suggests that the introduction of animals into the education context can cause tensions to arise between teachers and parents, especially when parents express concerns over children's allergies, hygiene or when they hold different cultural perspectives on the use of animals (Melson, 2001).

Conclusion

Using animals as pedagogical tools within the early childhood context enables children access to unique opportunities to explore life processes and develop working theories that other pedagogical approaches simply do not offer. However, the use of animals as pedagogical tools is highly reliant on the teacher's views and prior experience with animals (Leko & Brownwell, 2011). Existing literature is both promising and provocative, overwhelmingly documenting the benefits of capitalising on the animal human bond as a pedagogical tool. On one hand it provides strong evidence of the value of animals in the education context and on the other raises further questions of the impact different animals might have on children's learning within an early childhood context, calling for further research in this exciting area.



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