

THE USE OF ANIMALS IN EDUCATION

Ludmila Malariková, Kristýna Machová *, Ivona Svobodová,
Mariana Vadroňová

Czech University of Life Sciences, Faculty of Agrobiolgy, Food and Natural Resources, Department of Ethology and Companion Animal science, Prague, Czech Republic

Submitted: 2020-02-17

Accepted: 2020-06-05

Published online: 2020-07-10

Abstract

This article clarifies how animals may be of help in education – an approach called animal assisted education (AAE). AAE offers an improved and more interesting way of teaching. It also makes the process of education more effective and attractive to students. AAE may facilitate better communication between the students as well as the teachers; and, in general, establish better relationships in the classroom. This method of education is becoming increasingly popular. It is important to understand in which ways and how exactly animals may assist students and educators to achieve their goals.

Therefore, the goal of this article is to summarize how AAE may be implemented in schools and what benefits may arise from its use. In general, there are many different ways to include animals in children's education; whether this simply be the presence of the animal in class, letting children read to the animal, or spending time in the outdoors while engaging in a physical activity. Importantly, AAE may also be used in teaching children with special needs. Dogs are most commonly involved in AAE, but notably, it is also possible to use small mammals, farm animals, or cats. Ultimately, the inclusion of AAE is dependent on the creativity and determination of the teacher, and, undoubtedly, the cooperation and support from the school management.

Keywords: *Animal Assisted Education; Children; Dog; Education*

INTRODUCTION

The use of animals in classrooms has become a popular method of providing services to students with unique social, behavioral, and emotional disorders. Animal-assisted education (AAE) in the school environment is a complementary means of achieving educational goals by having an animal in the classroom (Friesen, 2009).

The mere presence of animals can improve the education environment. Specially trained classroom animals can motivate students with disabilities to learn socially important behaviors in a positive and

risk-free environment (Baumgartner and Cho, 2014), create a classroom-friendly learning environment and help to address the communication barriers of problem pupils (Kellnerová, 2013). Contact with animals teaches pupils to be calmer and to lessen their impulsive behavior (Flom, 2005). Several studies have focused their research on the role of pets in primary schools and what benefits their presence can bring. Daly and Suggs (2010) focused on teachers' experiences and attitudes regarding the use of pets in classrooms, and their opinions on the possible advantages of the animal's presence in the classroom. The data were collected from primary

school teachers. Many educators who participated in the study said that animals have a positive effect on increasing the pupil's empathy and social-emotional development.

The use of AAE in schools supports the development of cognitive and emotional skills. Interaction with animals can also be used in psychology, as it can act as a tool against stress, anxiety, and learning difficulties. In 2017, a study was conducted at an elementary school in Naples that involved 21 third-year elementary school students. The AAE involved a psychologist competent to perform therapeutic activities with the help of an animal, a veterinarian, animals as co-therapists, and the teachers were only observers. Three donkeys and one dog were used as therapy animals and the study lasted for five months (six visits lasting sixty minutes). The first five meetings took place with only a dog in the classroom. The last meeting with animals took place in the Experimental Center, where three donkeys were involved. Specific work in the classroom was in the form of games and cooperation with the animal. Through the targeted action of the animals on the group of children, it was observed that the children cooperated better with their peers. Pupils who were alone in the group before were also involved in the activities. Children became more empathetic and were able to keep their attention longer (Dicé et al., 2017).

The presence of an animal in the classroom can also be very beneficial for pupils with low self-esteem and self-respect. For these children, interaction with animals is much easier than with their peers. The most common reason is that the animal does not judge them nor ridicule them for their wrong answers or lack of knowledge. Classroom animals can also help address issues related to education, social bias, and communication problems. According to teachers, there are less aggressive children in the classroom where a dog is present. This finding suggests that the presence of animals in the classroom is not only suitable for children with disabilities, but is also important for the social and cognitive development of children. The presence of an animal is also utilized in the children of foreigners who have difficulty understanding the language when they start school (Hergovich et al., 2002).

One of the important factors for the successful integration of animals into education is an enthusiastic educator who is willing to make sacrifices (because keeping animals in the classroom is time-consuming). Furthermore, there is a need for motivated children who will be interested in activities with animals. Funding, tolerant colleagues, helpful school management and parents are also very important – as such activity should be carried out with general support and consistency. Appropriate places to keep the animals in should also be provided, and veterinary care must be ensured as well.

Effective animal implementation depends on strong administrative, parental, and peer support, as well as on the setting of clear and well measurable objectives, systematically monitoring student's progress, the choice of animal, and well-developed health and safety practices. When special educators and other professionals in the field of special education hear about animal-supported activities, they appreciate the potential benefits and possible applications for students with significant societal and behavioral problems – especially those with autism, learning disabilities, attention deficit hyperactivity disorder (ADHD), emotional behavioral disorder, and cognitive impairment (Baumgartner and Cho, 2014).

The goal of this review article is to inform experts and the general public about this increasingly popular method of education in which animals are involved in the learning process (AAE). The authors consider it important to spread awareness of AAE as it is potentially an effective method to help children (even those with special needs) to learn – and most importantly, to feel more included and comfortable at school.

MATERIALS AND METHODS

The method of content analysis of documents was used for the elaboration of this article. Relevant sources were searched through scientific databases (WOS, Pubmed, ScienceDirect, Scopus). The search was performed using keywords (animal assisted education; animal assisted activities; dog; children; special education; special needs; behavioral disorders) using the Boolean operators “and” and “or”.

During the next phase of the search, 45 studies were found. The results were then filtered to achieve the number of 35. In the next phase of the analysis, all duplicates and studies that did not deal with the issues we examined in the required context were removed. The total was 23 studies that were relevant, and we used them in the article. Collection and analysis of results took place between the autumn of 2017 and the summer of 2018.

RESULTS

Use of a dog in education

The use of specially trained **dogs** in educational programs has recently become increasingly popular – especially abroad. The presence of dogs in the class is attracting more and more attention, mainly due to their potential use in various therapies and activities in different age categories (Beetz et al., 2012). Research conducted over the past thirty years suggests that dogs can offer physiological, emotional, social, and physical support to children (Friesen, 2009).

A study conducted by Kotrschal and Ortbauer (2003) reported that the presence of a dog in the classroom led to a reduction in aggressive behavior and hyperactivity, and greater social cohesion in the classroom. The presence of a dog in the classroom can help to create a better social and emotional atmosphere, especially for children with language problems. Hergovich et al. (2002) say that in general the current findings show that the presence of a dog in the class has a positive effect on its students. They confirmed hypotheses about improving independence and empathy with animals. Dogs can also be used in the classroom to assist in everyday activities and can be the subject of creative story writing. Dogs may also participate in group class activities (Fung, 2016).

Abroad, dogs are used to improve reading skills in a so-called “dog-assisted reading program” (Kirnan et al., 2018). Hall et al. (2016) say there is evidence suggesting that reading to a dog can have a beneficial effect on several behavioral processes (which also have a positive influence on children’s well-being). Proponents of the “READ” project assume that reading with the assistance of dogs helps motivate children to read and increases their

confidence and peace of mind. The presence of the dog induces a sense of security when reading. It also affects physiological aspects such as lowering blood pressure.

It should be noted that projects such as READ do not provide any evidence through control groups to support this statement. However, there is evidence in the wider literature which suggests that greater motivation to read improves reading performance. READ programs try to overcome children’s fear of reading, which may have arisen from the mockery of classmates. Dogs are quiet companions that allow the children to work at their own pace without judging them. The “Dog assisted reading program” takes place in public libraries, school libraries, or classrooms. This activity may take place in an individual or group form, in which the whole class participates in the reading. It does not matter whether the program runs in libraries or classrooms, or in what form it takes place (Kirnan et al., 2015).

Effect of a dog’s presence on children with behavioral disorders and special educational needs

In pupils with mental retardation, contact with the dog leads to positive changes in their behavior. The presence of a dog leads to an improvement in the social interaction of children with teachers. Having a dog in the classroom positively affects the verbal and nonverbal components of communication (Esteves and Stokes, 2008). The dog also has evident effects on children with Down syndrome. Under the guidance of the therapist, it is necessary to first establish contact with the dog and remove the fear of the animal. For children with Down syndrome, the dog causes increased physical activity and the effort for greater independence. It expands vocabulary, affects concentration and develops all of the child’s senses (Budzinska-Wrezesień et al., 2012).

The presence of a dog in a class with students with special educational needs had a positive effect on the social relationships with classmates and the ability of pupils to endure longer activities. Interviews with teachers at elementary schools (where the dog-assisted reading took place) indicated that this activity led to improved behavior, especially for pupils with special educational needs (Kirnan et al.,

2018). Busch et al. (2016) describe how children with behavioral disorders, specifically ADHD, have been shown to pay more attention to the teacher when the dog is present in the classroom. When the dog is properly involved in the teaching process, it can help children focus and maintain attention. Otherwise, the dog can distract children from learning. Furthermore, the dog also motivates children to make greater efforts to fulfill the assigned tasks.

Effect of a dog's presence on children with an autistic spectrum disorder

Experts are increasingly engaged in the use of dogs in autistic children, both in research and practical use. The social interaction of a child with ASD with other people is limited, however, these children can establish and develop close relationships with animals (Hill et al., 2018). An animal can act as a social mediator for ASD children to connect with people around them (O'Haire et al., 2014). The positive effect of the presence of a dog on children with ASD was first reported by psychologist Dr. Boris Levinson in the sixties. He observed that the presence of a dog increased communication in these children and their willingness to participate in therapy (Hill et al., 2018). Autistic children suffer from increased social anxiety, they can be bullied, and rejected by their peers. Two methods are used in the interaction between autistic children and animals. The first method is free contact. In this method, the child is not forced to contact the dog directly and only the handler plays with the dog. The handler shows the child different exercises and tricks that the dog can perform. This method is used to relieve the child's fear of the dog. It is recommended to start therapy with this method. The second method is called contact therapy. In this method, the child is in direct contact with the dog. Contact therapy is used by the therapist when the child has overcome the fear of the dog and trusts the animal; and therefore, can better perceive the teacher's instructions. The fulfillment of these two conditions is necessary for the child to be able to fully relax (Budzinska-Wrzesień et al., 2012).

The presence of an animal can alleviate some stressful feelings. The animal acts as a buffer, and at the same time focuses on positive attention (O'Haire, 2017). Within one

group, experts noted improvements in verbal, nonverbal, and desirable behaviors, as well as a reduction in unwanted behavior during animal-assisted education (Hill et al., 2018). According to Beetz et al. (2012), we can assume that the long-term integration of the dog into classes with children with ASD reduces the main symptoms of this disorder.

The use of other animals in education

Horses can also be used in the education process. These are used for their physical attributes – mainly their size. The size and shape of the horse inspire respect in children. The horse is used in children with cognitive and emotional disorders and disabilities. Children with physical disabilities who underwent a program of horse-assisted activities (HAA) showed greater self-confidence than at the beginning of the program (Ewing et al., 2007).

Horse-assisted activities are one of the fields of equine-assisted interventions (hiporehabilitation). HAA is a method of social and special education which enables people to socialize, develop physical fitness, induce positive changes in their psyche, improve self-control, and improve movement coordination and balance. HAA can also be used in educational processes as a motivator. Within the scope of pedagogical activities, almost anyone can take part in the HAA if their health and mental condition allow safe execution of these activities (Koca and Ataseven, 2016). The method we call "horse-supported learning" is based on the experience of learning processes. It solves emotional problems, behavioral disorders, and individual problems of individual children. Contact with horses is used to address these problems (Dell et al., 2011). Horse-assisted activities and horse-supported teaching are almost identical methods. The first is used in the Czech Republic, the second abroad.

HAA in the education process can include feeding, grooming, and riding a horse. This method is unique because children must be physically active to meet the animal and, furthermore, they spend their time outdoors in the open air. A study by Ewing et al. (2007) involved several children with different case reports. One of the children was an eleven-year-old girl who had been diagnosed with behavioral disorders and educational and speech problems. This resulted in problems

with communication and maintaining eye contact. The girl experienced problems with her mother and had been sexually abused. She had no basic hygiene habits. This was reflected in her attending school in dirty clothes, and her unkempt and messy appearance. The girl went through a large and positive change during her visits to horses. The therapy was designed in such a way that the girl learned to care for herself while taking care of her horse. She knew that unless she was well-groomed, she and the horse could not go riding. HAA also helped her with the problem of communication and eye contact. She first learned to communicate and maintain eye contact with the horse – and later with the riding instructor.

Another animal that is used in education is the **cat**, which is used with younger children (Tomaszewska et al., 2017). The selected cat should seek out contact with people, be fond of petting, not be afraid of loud sounds, and not display unexpected behavior (Fine, 2006). The content of therapy with a cat can be stroking, brushing, petting, and feeding. A cat can also be part of the relaxation between activities. Children also learn the differences between domestic cats and wild cats. Part of the activities can be, for example, solving and doing puzzles with motifs of cats – during which children practice their motor skills. The presence of cats in classrooms has an impact on reducing stress, anxiety, and improv-

ing communication between children and the ability to learn. Cats can be used in physical education, where children stretch and mimic the movements of cats (Tomaszewska et al., 2017).

CONCLUSIONS

The use of animals in education offers many possibilities to make education special and different. When an animal is present, the environment is considered to be more pleasant, less directive, and offers an active involvement of pupils in animal welfare and teaching preparation. The animal positively influences relationships in the classroom, students' activity in lessons, and increases school attendance and interest in the curriculum. The cornerstone of animal-assisted education is the selection of an animal that will be comfortable and happy during these activities, and of course the enthusiasm and creativity of the educator.

Conflict of interests

The authors have no conflict of interests to declare.

Acknowledgements

We would like to thank Eliška Mičková for her help with the translation and preparation of the article.

REFERENCES

1. Baumgartner E, Cho J (2014). Animal-assisted Activities for Students with Disabilities: Obtaining Stakeholders' Approval and Planning Strategies for Teachers. *Childhood Education* 90(4): 281–290. DOI: 10.1080/00094056.2014.936221.
2. Beetz A, Uvnäs-Moberg K, Julius H, Kotrschal K (2012). Psychosocial and Psychophysiological Effects of Human – Animal Interactions: the possible role of oxytocin. *Front Psychol* 3(234): 1–15. DOI: 10.3389/fpsyg.2012.00234.
3. Budzińska-Wrzesień E, Wrzesień R, Jarmuł-Pietraszczyk J, Świtacz A (2012). Therapeutic Role of Animals in Human Life – Examples of Dog and Cat Assisted Therapy. *Ecol Chem Eng A* 19(11): 1375–1381. DOI: 10.2428/ecea.2012.19(11)133.
4. Busch C, Tucha L, Talarovicova A, Fuermaier ABM, Lewis-Evans B, Tucha O (2016). Animal-Assisted Interventions for Children with Attention Deficit/Hyperactivity Disorder: A theoretical review and consideration of future research directions. *Psychol Rep* 118(1): 292–331. DOI: 10.1177/0033294115626633.
5. Daly B, Suggs S (2010). Teachers' experiences with humane education and animals in the elementary classroom: implications for empathy development. *Journal of Moral Education* 39(1): 101–112. DOI: 10.1080/03057240903528733.

6. Dell CA, Chalmers D, Bresette N, Swain S, Rankin D, Hopkins C (2011). A Healing Space: The Experiences of First Nations and Inuit Youth with Equine-Assisted Learning (EAL). *Child & Youth Care Forum* 40(4): 319–336. DOI: 10.1007/s10566-011-9140-z.
7. Dicé F, Santaniello A, Gerardi F, Menna LF, Freda MF (2017). Meeting the emotion! Application for pet therapy to an experience for Animal Assisted Education (AAE) in primary school. *Pratiques Psychologiques* 23(4): 455–463. DOI: 10.1016/j.prps.2017.03.001.
8. Esteves SW, Stokes T (2008). Social Effects of a Dog's Presence on Children with Disabilities. *Anthrozoös* 21(1): 5–15. DOI: 10.1080/08927936.2008.11425166.
9. Ewing CA, MacDonald PM, Taylor M, Bowers MJ (2007). Equine-Facilitated Learning for Youths with Severe Emotional Disorders: A Quantitative and Qualitative Study. *Child and Youth Care Forum*. 36(1): 59–72. DOI: 10.1007/s10566-006-9031-x.
10. Fine AH (Ed.) (2006). *Handbook on Animal-Assisted Therapy*. Second Ed. Cambridge: Academic Press. 548 p.
11. Flom BL (2005). Counseling with pocket pets: Using small animals in elementary counseling programs. *Professional School Counseling*. 8(5): 469–471.
12. Friesen L (2009). Exploring Animal-Assisted Programs with Children in School and Therapeutic Contexts. *Early Childhood Educ J* 37(4): 261–267. DOI: 10.1007/s10643-009-0349-5.
13. Fung S (2016). Canine-assisted reading programs for children with special educational needs: rationale and recommendations for the use of dogs in assisting learning. *Educ Rev* 69(4): 435–450. DOI: 10.1080/00131911.2016.1228611.
14. Hall SS, Gee NR, Mills DS (2016). Children Reading to Dogs: A Systematic Review of the Literature. *Plos one* 11. DOI: 10.1371/journal.pone.0149759.
15. Hergovich, A, Monshi B, Semmler G, Ziegelmayer V (2002). The effects of the presence of a dog in the classroom. *Anthrozoös*. 15(1): 37–50. DOI: 10.2752/089279302786992775.
16. Hill J, Zivani J, Driscoll C, Cawdell-Smith J (2018). Can Canine-Assisted Interventions Affect the Social Behaviours of Children on the Autism Spectrum? A Systematic Review. *Rev J Autism Disord* 6(1): 13–25. DOI: 10.1007/s40489-018-0151-7.
17. Kellnerová D (2013). *Chov zvířat ve školách [Pets in schools]*. Brno: Lika – školské zařízení pro environmentální vzdělávání (Czech).
18. Kirnan J, Shah S, Lauletti C (2018). A dog-assisted reading programme's unanticipated impact in a special education classroom. *Educ Rev* 72(2): 196–219. DOI: 10.1080/00131911.2018.1495181.
19. Kirnan J, Siminerio S, Wong Z (2015). The Impact of a Therapy Dog Program on Children's Reading Skills and Attitudes toward Reading. *Early Child Educ J*. 44(6): 637–651. DOI: 10.1007/s10643-015-0747-9.
20. Koca TT, Ataseven H (2016). What is hippotherapy? The indications and effectiveness of hippotherapy. *North Clin Istanbul* 2(3): 247–252. DOI: 10.14744/nci.2016.71601.
21. Kotrschal K, Ortbauer B (2003). Behavioral effects of the presence of a dog in a classroom. *Anthrozoös* 16(2): 147–159. DOI: 10.2752/089279303786992170.
22. O'Haire M (2017). Research on animal-assisted intervention and autism spectrum disorder, 2012–2015. *Appl Dev Sci* 21(3): 200–216. DOI: 10.1080/10888691.2016.1243988.
23. O'Haire ME, McKenzie SJ, McCune S, Slaughter V (2014). Effects of Classroom Animal-Assisted Activities on Social Functioning in Children with Autism Spectrum Disorder. *Journal Altern Complement Med* 20(3): 162–168. DOI: 10.1089/acm.2013.0165.
24. Tomaszewska K, Bomert I, Wilkiewicz-Wawro E (2017). Feline-assisted therapy: Integrating contact with cats into treatment plans. *Polish Ann Med* 24(2): 283–286. DOI: 10.1016/j.poamed.2016.11.011.

 **Contact:**

Kristýna Machová, Czech University of Life Sciences, Faculty of Agrobiological Sciences, Department of Ethology and Companion Animal Science, Kamýčská 129, 165 21 Prague, Czech Republic
Email: machovakristyna@af.czu.cz