5-8-2018

Animals Are Us: Applying the Common Ingroup Identity Model to Humane Education

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by

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A Dissertation
Submitted to the Faculty of Graduate Studies
through the Faculty of Education
in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy
at the University of Windsor

Windsor, Ontario, Canada
2018

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AUTHOR'S DECLARATION OF ORIGINALITY

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ABSTRACT

This study explored the applicability of the *Common Ingroup Identity Model* (*CIIM*), used widely for combating racism, to Humane Education. It credits social categorization with both reducing and creating intergroup bias. It postulates decategorization and recategorization as factors changing ingroup boundaries, so former outgroup members can be seen as current ingroup members. The study aimed at gauging the effect of decategorization and recategorization on graduate student teachers' attitudes toward animals and on their willingness to include animal-centered humane themes in their instruction. This study used exploratory mixed-methods design, in which the qualitative phase followed and explained the quantitative quasi-experimental phase. Two intact groups of graduate student teachers were randomly assigned to either the Experimental or to the Control Group. *Animal Attitude Scale (AAS)* (Herzog, Betchart, & Pittman, 1991) and *Animal-Centered Instruction Scale (A-CIS)* were administered to both groups pre- and post-intervention. *A-CIS*, designed for the purpose of this study, is a Likert-type self-reporting measure containing 28 items. One week after administering these instruments and obtaining participants' demographics information, the Experimental Group was given a 90-minute-long training in decategorization and recategorization focused on human versus animal categories. The Control Group was engaged in the 90-minute-long classroom activities unrelated to the *CIIM*. One week later, both groups were re-administered the two instruments. The pre- and post-intervention composite scores on both scales were compared using a paired-samples *t*-test. The quantitative analysis reflected 2 conditions (experimental, control) x 2 times (pre-test, post-test). The results

were contrary to the expectations as there were no significant differences between the two groups on the intervention check. No effects of the intervention on attitudes towards animals, measured on *AAS*, were found. Furthermore, there were no significant differences between results stemming from the *A-CIS* that measured teachers' attitudes towards including animal themes in their instruction. However, the subsequent analysis of disaggregated data rendered the significant results showing that such factors as being female, having children, and identifying as politically liberal, correlate with higher scores on the *AAS*. Based on the *A-CIS* data, seven composite variables were analyzed with the paired-samples *t*-test. In the Experimental Group, there were statistically significant increases on two composite variables: *Using Animals in Science, Education, and Research* and *Using Animals in Entertainment*. *Farm Animals* and *Companion Animals* increased after the intervention, though not significantly, while *Wildlife* did not change. Both *Humane Education* and *Non-animal Related* composite variable decreased after the intervention. The qualitative analysis revealed that although teachers expressed their interest in Humane Education and saw its many benefits, they also listed several obstacles to being able to apply it in their everyday practice. The obstacles included lack of expertise, work overload, and administrative and parental approval. Implications of findings to teachers' preparation programs are discussed. The new *A-CIS* may prove to be a useful data collection tool after adjustments and additional testing are done on larger samples.

DEDICATION

I dedicate this work to all my planetary companions, human and non-human.

ACKNOWLEDGEMENTS

A doctoral dissertation is shaped more by social interactions than it is by an individual's intellectual efforts. Thus, I am indebted to numerous human and non-human persons who had directly or indirectly influenced my thinking before and/or during the process of writing this dissertation. Here I would like to acknowledge those whose impact on this work was most profound.

Words cannot express my gratitude to Dr. Dragana Martinovic, the advisor without whom this dissertation would not have been completed. Your professional expertise, brilliant mind, loving heart, and patience made my finishing this work possible. I will be forever grateful for meeting you on my life journey.

My big thank you goes to Dr. Larry Morton, my first advisor, whose invaluable advice given to me in early stages of the process provided perfect scaffolding on which I could build my research. I hope you approve, Larry, wherever you are…

Many thanks go to my Committee Members for their painstaking labor in order to strengthen my work not only to meet the stringent standards required of a doctoral research, but also to make it, as much as possible, meaningful to humane educators. I thank Dr. Geri Salinitri for directing my efforts toward educational practice, as contributing to this area was the ultimate goal of my research. Dr. Douglas Karrow's input regarding both environmental and indigenous education enriched and expanded my view of humane education. Dr. Amy Fitzgerald's close reading of my dissertation, and especially her invaluable comments regarding the methodology of the study made me think concretely of future research I would like to conduct. I am indebted to Dr. Robert Mitchell, my external examiner, for his generosity in agreeing to serve in this capacity, in

providing feedback so quickly, and in believing in the value of my work. I was honored and humbled by his comments, as he is one of leading North American scholars in Animal Studies.

Support from family and friends is just as important as academic support. Thus, I want to thank my husband, Carlo Capalbo, for his unwavering encouragement throughout the long years of my doctoral studies. Carlo, you were always there for me, in successes and challenges, and you have my loving thanks for it. I would like to thank my fellow vegan and humane educator, and my best friend, Dr. Andrew Domzalski, for serving selflessly, day and night, as a springboard for bouncing my ideas and for always reminding me of deadlines and next steps to take in the process. Andrew, you were the best peer coach of which any doctoral student could only dream. My acknowledgments of family and friends would not be complete without thanking numerous non-human persons in my life for teaching me about their emotions, thinking, and social lives. I would like especially to thank my canine friend Penny and my feline friend Sophie for showing me in so many loving ways that that friendships often cross the species barrier, if we only allow it. This work is ultimately for you and for all of my planetary companions.

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LIST OF ABBREVIATIONS

Common Ingroup Identity Model (*CIIM*)
Animal Attitude Scale (AAS) (Herzog, Betchart, & Pittman, 1991)
Animal-Centered Instruction Scale (A-CIS) (Gatarek, 2018)

DEFINITION OF TERMS

Abolitionism is defined as a position that opposes any kind of animal use by humans.

Animal is defined as any organism from the biological kingdom Animalia (from the Latin, animalis, meaning "*having the breath of life").*

Common Ingroup Identity Model (*CIIM*) is defined as a theoretical model of intergroup bias that is based on the concept of social categorization. It assumes that intergroup bias can be reduced through decategorization and recategorization, which leads to creating new ingroup boundaries.

Decategorizing is defined as a cognitive process that allows for perceiving the members of a given category as individuals.

Human is defined as any member of species Homo sapiens, subspecies *Homo sapiens sapiens*, kingdom *Animalia*, phylum *Chordata*, class *Mammalia*, order *Primates*, family *Hominidae.*

Humane Education is defined as a pedagogy that interconnects social justice, environmental ethics, and animal wellbeing.

Nonhuman animal is defined as any member of kingdom *Animalia* other than *Homo sapiens.*

Recategorizing is defined as creating super-ordinate categories to include the members of various original categories.

Speciesism is defined as attitudes and behaviours that deny nonhuman animals equal consideration and respect.

CHAPTER I: INTRODUCTION

> Out beyond ideas of wrongdoing and rightdoing,
> There is a field. I'll meet you there.
>
> When the soul lies down in that grass,
> The world is too full to talk about.
> Ideas, language, even the phrase "each other"
> Doesn't make any sense.
>
> (Mevlana Jelaluddin Rumi, 1995)

In this new millennium, the two issues, environmental conservation and animal protection, have been tied with social justice (Weil, 2004; Goodall & Bekoff, 2002), thus creating a fertile ground for the so-called broad-based Humane Education. This development is reflected in Humane Education programs mushrooming across K-12 schools worldwide, most notably Jane Goodall's youth service program, named *Roots and Shoots* (http://rootsandshoots.org/groups). In addition, there are now two North American universities that offer graduate programs in the field: the pioneer Institute for Humane Education at the Valparaiso University (http://www.valpo.edu/graduate-school/programs/humane-education-m-a-m-ed-mals-certificate/) and a newly established program in humane studies at Madonna University (http://www.madonna.edu/academics/academic-programs/mhus).

The current study is motivated by the above cultural shift which is taking place over the last three decades in attempts to change societal attitudes toward environmental protection and animal welfare (Russell, 1995; Selby, 1999). It is also driven by the

imperative to build a solid conceptual base for this burgeoning new field. An effective way to do it would be to employ an educational paradigm, which unifies goals often perceived as separate, such as teaching acceptance toward those of different race, gender, sexual orientation, and culture, as well as emphasizing respect for the environment and kindness to animals. Extant studies investigating kindness to animals tend to focus on interventions that potentially have impact on students, thus changing their attitudes toward animals and on modeling good citizenship (Myers, 1998; Myers & Saunders, 2002; Myers, Saunders, & Garrett, 2004; Nicoll, Trifone, & Ellery, 2008). Although there is a body of research that focuses on teachers' attitudes toward some controversial practices in the classroom, such as animal dissection (Barr & Herzog, 2000; King, Ross, Stephens, & Rowan, 2004; Oakley, 2011; Oakley, 2013), there are few studies that directly address Humane Education in teacher preparation (Gorman, 2005; Herzog & Burghardt, 2005; Szecsi, 2014; Tate, 2011). However, all authors agree that further work in this area is required (Shapiro, 2008; Szecsi, 2014; Tate, 2011). Thus, this doctoral research aims at closing this gap, while building directly upon the existing scholarly work in the field.

Personal Stance

During my doctoral program I have been asked several times what my epistemological, ontological, and methodological assumptions are. I have been trying to find the answer to those questions for the past thirty odd years with no apparent success. In a way, I am satisfied with an outcome, because the search has proven to be much more educational that any definite answer offered by the "experts in the field." Perhaps this is a personal problem I have with avoiding commitments, but I am always suspicious (by nature and training) of authoritarian claims to the absolute truth.

It seems to be taken for granted in research practice that the research methodology depends on the epistemological beliefs of the researcher. If it is so, this fact begs the subsequent question whether research should depend on the researcher's epistemological beliefs. It could be argued that the researcher's identification with a particular theory or a paradigm may result in a picture of the examined phenomenon skewed to exhibit the pre-conceived notions held by that researcher. Of course, qualitative research allows for subjective, personal interpretations and provides the system of checks and balances through triangulation and other means. Yet, such internal checks and balances do not successfully counter the limitations resulting from the researcher following his/her preconceived notions. Unless the researcher can freely choose among theoretical paradigms and their methodological equivalents, regardless of her personal beliefs, how does research process differ from a religious exegesis of a sacred text, where questions and answers are constrained by a specific belief system? Can the researcher's beliefs be proved wrong by the research inquiry that assumes those beliefs are axioms?

When I am asked about my world view, a story comes to my mind. Ayn Rand (Branden, 1986) was once asked to state her philosophical beliefs while standing on one leg. This is what she said:

1. Metaphysics: Objective Reality
2. Epistemology: Reason
3. Ethics: Self-interest
4. Politics: Capitalism

This story is one of the reasons why I do not like to flash my membership card. The labels can be so misleading. Let us take for example the claim of objective reality.

Even if I agree, with some reservations, that objective reality exists, my understanding of it has nothing to do with Rand's interpretation of it as the absolute reality.

Obviously a lot of other things can be said about Rand's statement, as for me, such strong convictions often lead to dogma and dogmatism is seldom congruent with diversity or intellectual exchange. This has always been a problem with many intellectual establishments where few people monopolize the field and actively prevent others from expressing contradictory ideas. If we are to create spaces where diversity can flourish, we need to design educational programs that teach and model multiple perspectives and create means of expression for those new ideas.

I was trained in the positivistic paradigm, but through the "generous scholarship" (Russell, 2009) of people I encountered on my academic journey, I had a chance to explore other modalities and theoretical perspectives such as critical pedagogy, eco-feminism, teaching and activism, Humane Education, indigenous methodologies, and ethical issues in research (e.g., condescending and relational ethics).

If I were forced to make a declaration, as Rand had been, my one-leg stand would look as follows:

1. Metaphysics/Ontology: More-than-human world (but not a new materialism)
2. Epistemology: Postmodernism/different ways of knowing
3. Ethics: Situational Ethic and The Best Caring Ethic
4. Politics: Socialism and Abolitionism

More-than-human world refers to the fact that there is more to the reality than our anthropocentric imagination would suggest. Abram (1996), who coined this phrase, explains it as a commonwealth of beings while including human culture.

Postmodernism advocates for epistemological pluralism and employs different ways of knowing. It gives the same credence to intuition, insight, aesthetic experience, as it does to scientific inquiry.

Situational Ethic claims that ethical choices should be based on moral decisions in a particular context rather than moral prescriptions. Different scenarios call for different moral actions depending on the context, our relationship, and history with an animal (Palmer, 2010). The Best-Caring Ethics is committed to the best outcomes of actions and polices for a constellation of individuals. What is "best" is to have a separate significance for each and every sentient being (Sztybel, 2006).

Socialist stance in the social justice context represents equal rights for all regardless of creed, race, gender, sexual orientation, age, physical or mental abilities, etc. It also includes equal access to education, health care, employment, and services as well as equitable distribution of wealth to every person.

Abolitionist stance, in regards to human use of animals, accepts that nonhuman animals are not commodities and that they have intrinsic value in themselves. They all have the right to life and autonomy.

Foremost of all, I consider myself a pragmatist that is willing to switch between theoretical positions as the problem dictates. As do transformative researchers, I also "believe that inquiry needs to be intertwined with politics and a political agenda" (Creswell, 2003, p. 9). Researchers need to acknowledge and address issues of ethics, privilege, power, and social justice in their research (Mertens, 2010).

I have approached this research as an animal advocate. I consider myself an animal advocate in the sense that all my actions as an academic and a teacher, as well as my everyday choices, have an animal's wellbeing in mind. I intentionally choose the term

"wellbeing" over the more commonly used term "welfare" because of my abolitionist stance. With that comes my commitment to a vegan lifestyle, which rejects any use of animals or animal products.

Over a decade ago I became a vegan out of concern for animals. I see this as a step in my moral and spiritual development. As Francione (1996) who is an abolitionist, I consider veganism a moral imperative. This means that I reject any use of animals as resources for food, clothing, research, entertainment, or as workforce. I am trying to be strict with my diet, products, and services that I purchase, however I acknowledge that pursuing veganism is challenging on many accounts.

First, there are economic constraints. I recognize that in North America, white, middle class members dominate the Vegan movement. It is for this section of society that the vegan food industry caters with relatively expensive products. Thus, many of those products remain out of reach for people who, like me, have modest incomes. Another constraint on my veganism is imposed by the fact that I buy meat products for rescue cats, thus financially supporting the meat industry and participating in animal oppression. The above limitations, in addition to the realization that it took me several decades to resolve to become a vegan, makes me humble and non-judgmental regarding dietary choices of my fellow humans. In my everyday life as vegan I aim to educate others rather than alienate them—a criticism often associated with veganism (Prince, 2016). I also try to stay critical and open-minded as new evidence of consciousness in other than animal life forms emerges (Marder, 2012; 2013).

From the historical perspective, Veganism is a relatively new movement, a newcomer, when compared with vegetarianism practiced for thousands of years for religious reasons by Jains, many Hindus, and Buddhists as well as some Christian

religious orders. One notable exception was the 11th century Arab philosopher and poet Al Ma'ari (Pay, 2000) who deliberately stayed away from "stealing from Nature."[1]

The modern term "veganism" was coined in 1944 by Donald Watson, the founder of the Vegan Society in the United Kingdom (Watson, 1945). Three years later, the first vegan society was established in the U.S.A. However, veganism did not become a movement until 1960's, when the consolidation of farms into large agribusiness conglomerates took root, obliterating small family-owned farms and introducing factory farming. Today, "according to the United States Department of Agriculture, the largest 2 percent of factory farms produce more than 40 percent of all farm animals" (DeMello, 2012, p. 136).

While the focus of veganism remains on dietary choices, the principle of not using animal products extends to clothing, furniture, and to chemicals that are routinely tested on animals, from detergents, to cosmetics, to medications. In addition, many vegans refrain from attending shows that use animals for entertainment. It is important to acknowledge that some people follow a vegan diet for reasons other than moral concern for animals, such as health or environmental conservation, as factory farming contributes greatly to air, soil, and water pollution.

[1] I No Longer Steal from Nature
…Do not unjustly eat fish the water has given up,
And do not desire as food the flesh of slaughtered animals,
Or the white milk of mothers who intended its pure draught for their young, not noble ladies.
And do not grieve the unsuspecting birds by taking eggs; for injustice is the worst of crimes.
And spare the honey which the bees get industriously from the flowers of fragrant plants;
For they did not store it that it might belong to others, nor did they gather it for bounty and gifts.
… Retrieved from https://www.scribd.com/doc/181136029/Al-Ma-arri-pdf

I included the above explanation of my personal stance as, in addition to the theoretical framework described in the next section, it provides lens through which I approached my dissertation research.

Theoretical Framework

This research is situated in the fields of Humane Education (Humes, 2008; Selby, 2000; Weil, 2004), species justice (Andrzejewki, Pedersen, & Wicklund, 2009; Dunayer, 2004; Francione, 1996; Francione & Garner, 2010; Nibert 2002), and the cognitive theory of Common Ingroup Identity Model (Gaertner, Dovidio, & Bachman, 1996; Dovidio & Gaertner, 1999; Gaertner & Dovidio, 2000; Gaertner & Dovidio, 2009).

Humane Education

Humane Education is currently defined as a field encompassing (a) animal well-being; (b) social justice; and (c) environmental ethics; and, the interrelatedness of those three areas. This broad-based conceptualization is the fruit of activism of scholars, such as Jane Goodall, a British primatologist who is known through her research on tool use and tool making in chimpanzees, as well as her conservation efforts. Other scholars include Mary Gordon, the founder of the Canadian school program "Roots of Empathy," and Zoe Weil, who created the Institute for Humane Education, the first of its kind in the U.S.A. Through the first half of the twentieth century, Humane Education was identified with character education, and as such enjoyed its "golden age" in the first two decades of the 20th century (Oakley, 2007). Although often thought of as a modern development, Humane Education finds its religious and philosophical roots in antiquity across a wide cultural spectrum from India to Greece to the Middle East, the latter being the cradle of the three world religions—Judaism, Christianity, and Islam—each with scriptures

including concerns for the welfare of animals. All those influences are examined with greater detail in Chapter II: Literature Review.

Ultimately, Humane Education is about pedagogical strategies that can bring about the message of interrelatedness between species, the intrinsic value of each sentient being, and developing solutionaries, the term coined by Zoe Weil (2004) that encompasses solutions that do not harm environment, people, or animals. Today's educators possess a wide spectrum of tools in their arsenal such as replacing classroom vivisection and dissection of animals with computer models, exposing students to animals in positive contexts, and service learning,. The effectiveness of these tools is analyzed further in the literature review section of this thesis.

Species Justice

Speciesism, which denotes the exclusion of members of other than human species from the realm of moral consideration, is a relatively new term, but it draws conceptually upon ancient religious and philosophical traditions such as Western religions originated in the Middle East (Singer, 1975) and Aristotelianism (Regan, 1983). This millennia-old unbridgeable chasm between humans and nonhuman beings, based on the idea that only humans are created in the image of God, has given license to use animals not only for food or as beasts of burden, but later on also as subjects of scientific experiments, as the Cartesian view of animals as automats (Regan, 1983; Taylor, 2003) was adopted by many scientists regardless of their religious stance. Since the term was first used in 1975 by Richard Dryer (Singer, 1975), many scholars have argued against the speciesist view, comparing it with racism and sexism thus giving rise to the framework called by different scholars anti-speciesism, non-speciesism or species justice. Some scholars contrast the so-called new speciesism, i.e., giving moral considerations to selected species, with the

abolitionist view of Francione that opposes any kind of animals use by humans (Francione & Garner, 2010). Various arguments surrounding those issues are detailed in the literature review section of this thesis, as are the developments in the realms of law and science inspired by the species justice.

The discussion of species justice is vital to the goal of this study, as the framework aims at replacing speciesism, which is the main encumbrance to seeing nonhuman animals as deserving the same moral considerations as humans do. Giving the similarities of speciesism to racism, as both are governed by the mechanisms based on ingroup vs. outgroup distinctions, it makes perfect sense to propose that the *Common Ingroup Identity Model* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000) which has proven its usefulness in combatting racism, be used as a tool to advance species justice.

Common Ingroup Identity Model (*CIIM*)

While the current study is grounded in the framework of Humane Education, it explores the feasibility of applying the strategies of another framework, namely the *CIIM* model, to advance the goals of Humane Education. Such an approach is consistent with a common practice of cross-pollination between theoretical paradigms to increase robustness of their strategies and yield effective results in praxis. Since speciesism remains the central encumbrance for the success of implementing Humane Education, paradigms that aim at reducing bias and prejudice hold promise for this developing field. Considering that there are many similarities between racism and speciesism, as both are based on categorizations that involve thinking in terms of "otherness," or group members versus non-group members, it is logical to assume that models applied successfully to reduce racist attitudes may be of use in reducing speciesist attitudes as well.

The *Common Ingroup Identity Model* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000) finds its roots in Allport's idea of social categorization (Allport, 1954). According to the model, intergroup bias is a result of social categorization. Yet, the very same process can be used to reduce intergroup bias through decategorization and recategorization, which leads to creating new ingroup boundaries. A plethora of studies (see e.g., Bar-Tal, 1989; Bizumic, Duckitt, Popadic, Dru, & Krauss, 2009; Demoulin et al., 2005; Foddy, Platow, & Yamagishi, 2009; Knafo, Schwartz, & Levine, 2009; Leyens et al., 2000; Paladino et al., 2002) attest to the strong positive bias toward ingroup members as opposed to those beyond the ingroup boundaries. Optimistically, some studies (e.g., Dovidio, 2001; Gaertner, Mann, Dovidio, Murrell, & Pomare, 1990; Gaertner & Dovidio, 2000) suggest that such boundaries are subject to modifications that lead to attitudinal changes as well. The latter provide the motivation to use the *Common Ingroup Identity Model* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000) as a basis for creating interventions aiming at reducing speciesist bias.

Overview of the Research Study

Purpose of the study

This study aims at examining the application of the *Common Ingroup Identity Model* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000) to Humane Education. It explores the effectiveness of this model, which was successfully implemented in fighting racism (Dovidio & Gaertner, 1999), as a potential tool for reducing speciesism in teacher preparation. In particular, this study explores whether the central *CIIM* techniques of decategorization and recategorization improve participants' attitudes toward nonhuman animals. It also tests the degree to which those techniques increase participants' willingness to include animal-centered humane themes in their

instruction. The results of the study inform recommendations for inclusion of the *CIIM* strategies in teacher preparation curricula.

Research Questions

The following two research questions were examined:

Research Question 1: Does learning *CIIM*-based decategorization and recategorization toward nonhuman animals change participants' attitudes toward the targeted groups?

Research Question 2: Does learning *CIIM*-based decategorization and recategorization toward nonhuman animals change the perceived likelihood of participants' including animal-centered humane themes in their instruction?

To further inform the quantitative part of the study the following question guided the qualitative inquiry: How do factors, be they educational, social, emotional or procedural, shape the trends shown by a quantitative analysis?

Research Design

The mixed-methods research approach was deemed appropriate because of the nature of the research problem. Creswell, Klassen, Plano Clark, & Smith (2011) define mixed methods as focusing on "research questions that call for real-life contextual understandings, multi-level perspectives, and cultural influences; employing rigorous quantitative research assessing the magnitude and frequency of constructs and rigorous qualitative research exploring the meaning and understanding of constructs; utilizing multiple methods…intentionally integrating or combining these methods to draw on the strengths of each; and framing the investigation within philosophical and theoretical positions." (p. 4).

As a relatively new discipline, Humane Education is in need of empirical evidence that can shape humane pedagogy. Solomon (2014) shares this view when discussing the role of empirical evidence in shaping education practice and policy in regards to the well-established filed of numeracy and mathematics education.

Consequently, this study included a quantitative measurement of attitude change after a one-time instructional intervention. The quantitative part of this study used the pre-test, post-test control quasi-experimental design that seeks to discover the impact of CIIM-based instructional strategies on attitudes toward animals and toward using pro-animal instructional strategies in the classroom (Creswell, 2008; Gall, Gall, & Borg, 2007). Since this study did not include random selection of participants to groups, the quasi-experimental design was implemented (Creswell, 2008). To further inform its quantitative findings, a qualitative component consisting of an open-ended comment section, as well as an asynchronous online focus group, were also used.

Participants

Participants were students in two classes of a graduate language education program in a medium-size Midwestern US University enrolled in a Second Language Acquisition course. Each intact group of 14 participants was randomly assigned to the Intervention and Control Conditions.

A detailed description of research design, instruments, instructional intervention, methods and procedures can be found in Chapter III, Research Design and Methodology, of this dissertation.

Summary

This chapter started with my rationale for the current study, which was two-fold in nature. The study was motivated by the cultural shift taking place over the last three decades, which calls for linking social justice, environmental conservation, and animal protection under one umbrella. The above trend, in turn, necessitates a formulation of a conceptual basis fitting this new field of broad-based Humane Education. My study was meant as a step toward meeting that need.

In the spirit of full disclosure, I described my philosophical and political points of departure. My ontological stance is more-than-human world, while epistemologically I assume the lenses of postmodernism. In the realm of ethics I favor Situational Ethic and The Best Caring Ethic. Politically, I subscribe to socialism, abolitionism, and veganism. I provided definitions of all of the above concepts in Chapter I.

Subsequently, I described the three pillars of my theoretical framework: humane education, species justice, and Common Ingroup Identity Model, which guided the purpose of my study, its research questions, design, and participants. The last four elements are addressed in the final section of Chapter I.

CHAPTER II: LITERATURE REVIEW

This literature review seeks to situate the *Common Ingroup Identity Model* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000) in a broader context of Humane Education and to gauge the model's potential for combating speciesism in teacher preparation and practice. It also aims to explore the roots and developments of ideas relevant to Humane Education in both ancient and modern times. To this effect, it delineates religious and philosophical ideas that constitute the basis for our current conceptualizations of animals in relation to human Western society. Since one is often unaware of the prevailing influence of religious thinking and ancient philosophical concepts on how one views and treats animals daily, it is important to discuss them explicitly to give a more in-depth picture of the forces governing our individual and societal behavior toward nonhuman animals.

For the above purposes, this literature review is divided into four parts: (1) *Humane Education: History and current developments*, (2) *Humane Education in teacher preparation,* (3) *The conceptual framework of the Common Ingroup Identity Model,* and (4) *Species Justice.*

The first part starts with religious and philosophical foundations of human relation to animals. It shows how these foundations have historically played out in the realm of science and culminates in a discussion of current developments in humane education. The second part presents examples of Humane Education strategies. The third part provides background information on ingroup versus outgroup behaviors subsequently to focus on the *Common Ingroup Identity Model* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000) with a particular emphasis on its usefulness to Humane Education. The

last part includes discussion on speciesism and its similarity to other forms of oppression, such as racism and sexism.

Humane Education: History and Current Developments

Religious foundations. While Humane Education may be seen as a modern development, its roots can be traced far back into ancient history, especially in various religious traditions and their scriptures (Kemmerer, 2011a). Although disparate sacred texts clearly contain the views relevant to Humane Education, they are seldom a part of modern religious discourse (Regenstein, 1991; Phelps, 2002; Camosy, 2013). Historically, whenever animals would enter theological discussions, they would be subject to anthropocentric bias, well exemplified by the debates over the meaning of the Judeo-Christian concept of dominion and stewardship mentioned later in this section (Scully, 2002).

Yet, both the Western and Eastern traditions boast mainstream historical figures whose concern for animals is well known. In the Catholic tradition, Saint Francis leads the way. There are many stories, some undoubtedly apocryphal, that describe this Saint's relationship to his "little brethren," as he called animals (Engelbert, 1979; Barad, 2011). In Buddhism, a story about King Asoka the Great (c. 274-232 B.C.E.), the sponsor of first animal hospitals and laws seriously curtailing hunting, meat consumption, and requiring digging wells along all major roads for both humans and animals alike, provides a fine example of humane concerns in the Eastern traditions (Regenstein, 1991, Phelps, 2004).

Also, Judaism and Islam place great stress on proper treatment of animals (Scully 2002; Perlo, 2009; Kemmerer, 2011c). In the Torah, humanity is given dominion over animals (Gen., 1:26), which gives people the right to use animals for legitimate needs. However, dominion does not give humans the right to cause indiscriminate pain and

destruction. Judaism has recognized dominion as stewardship: “A righteous man has regard for the life of his beast” (Proverbs, 12:10). The link between dominion as stewardship and avoiding cruelty in husbandry is clear in the Talmud, which serves as the basis for Jewish law (Regenstein, 1991).

Similarly, the essence of Islamic teachings on animal rights is that the Earth belongs to all creatures: “And the earth – He has assigned it to all living creatures” (the Qur’an, 55:10-12, Haleem, M.A.S.A. (Trans.), 2004). The Islamic tradition holds all animals in high esteem, and affirms that animals deserve the same level of consideration as humans (Tlili, 2015). The Quran sets the tone for human relations with animals with the following verse “there is not an animal in the earth nor a flying creature flying on two wings, but they are people like you” (the Qur’an, 6: 38). Furthermore, the Qur’an (80:24-32) emphasizes that food and other resources of nature are there to be shared equitably with other creatures.

The images of animals equal or even superior to humans, the unity of the human-animal world, and the divinity of animals are frequent themes in aboriginal religions across the globe (Atwood, 1993; Jones 2005). Often Indigenous Peoples view animals as kin and believe in spiritual relationship between all creatures (Kemmerer, 2011b). This is expressed by the concept of kincentric ecology that represents the way in which Indigenous People view themselves, plants, and animals as part of an extended ecological family (Salmón, 2000). Other creatures are recognized as individuals that exist for their own purpose. “Throughout Native American cultures, there is a broad commonality of beliefs about animals, in which human and nonhuman are bonded closely and part of one community involved with one another in terms of empowerment and emotional interactions” (Pierotti & Wildcat, 2000, p.1336). That ecological connection is

recognized through clan names, totems, and ceremonies. One example of the importance and respect given to animals in Native American religions is the role the wolf plays in the spirituality of the Ojibwe. Not only that the wolf figures prominently in this Nations' creation story, but it also serves as a spiritual guide to people (Rasmussen, 2017*)*.

Philosophical foundations. The discussions on moral standing of animals in relation to humans have been present in Western philosophy since ancient Greece. Although some ancient thinkers, such as Pythagoras, Empedocles, and Theophrastus, argued for the respect for animals based on the belief in the transfiguration of souls between human and animal bodies (Kahn, 2001; Taylor, 2003), many others did not give animals the same moral status (Steiner, 2005; Gruen, 2010). This was true of Aristotle, one of the most influential philosophers in the Western tradition. He classified animals on a hierarchical scale,"Scala Naturae" known as "Chain of Being" or "Ladder of Life", which consisted of God, man, mammals, oviparous with perfect eggs (e.g., birds), oviparous with non-perfect eggs (e.g., fish), insects, plants, and non-living matter (Singer, 1931). Aristotle considered each link in the chain as a "species" (Barnes, 1995; Linzey, 1995). Central to Aristotle's philosophy and expressed across his works was the vision of the world as structured by the natural hierarchy of beings. A being's place in this hierarchy was based on its ability to nurture, reproduce, have conscious experience and self-motivation, and to reason. This rendered plants inferior to animals and humans, as capable only of nurturing and reproduction, and animals inferior to humans as they did not have the capacity for rational thought.

In his most prominent work, the *Politics*, Aristotle (trans. Sinclair, 1985) argued that animals were not capable of theoretical reason, which he called *logos*, and thus were inferior to humans. As such, their purpose was to serve human needs (Sorabji, 1993;

Steiner, 2005). It is worth noting that by the same principle of lack of reason, women, and slaves were also considered inferior to men (Taylor, 2003).

Although inferior to humans, animals, according to Aristotle, were still capable of conscious experience and voluntary motion. Not so according to the Stoics, another major philosophical school that greatly influenced the Western culture. Founded by Zeno of Citrium in the third century BC, Stoicism became the dominant doctrine in both Greece and in the Roman Empire. Its enormous influence that lasted well into sixth century AD is attributed to the fact that unlike other scholars, Stoics taught in public places reaching a popular audience (Baltzy, 2008). Stoics put an emphasis on the concept of belonging as a basis of any just behavior. According to this view, a moral action was based on the ability to extend the circle of inclusiveness from oneself to others as members of community. However, humans as rational beings could only extend belonging, and therefore justice, to other rational beings. Non-rational animals were not only incapable of just action but were also excluded from humans' moral considerations (Baltzy, 2008; Sorabji, 1993).

Greek philosophers' ideas about the place of animals in the hierarchy of beings as subservient to humans found their way to Christianity. St. Augustine, an early Western Church Father (354–430AD) who lived in North Africa, and Thomas Aquinas, an Italian Dominican friar (1225–1274AD), considered the two most influential Christian philosophers, shaped not only the Church doctrine, but also influenced the Roman law. The notion expressed in the fourth century AD by the Roman jurist Hermogenianus, "Hominum causa omne jus constitum" ("All law was established for men's sake") is still found verbatim in the modern texts on jurisprudence (Wise, 2000, p. 24). The idea of the natural hierarchy of beings also influenced the major biological theories of evolution

posited by naturalists from Carolus Linnaeus, to Comte de Buffon, to Charles Darwin, and Alfred R. Wallace (Singer, 1931).

Scientific foundations. Given religious and philosophical foundations, it should come as no surprise that the modern Western science, developed in the socio-cultural milieu rooted in the thoughts of Aristotle and Thomas Aquinas, inherited a strong bias against the nonhuman animals. The idea that animals lack reason, immortal soul, language, as well as the ability to experience pain and pleasure was further perpetuated by Rene Descartes (Regan, 1983; Taylor, 2003). Applying such beliefs to scientific methods, Descartes engaged in various experiments that included vivisection (Sztybel, 1998). Curiously enough, the issue whether animals can be considered conscious and feel pain is still present in recent philosophical debates (Carruthers, 1989; Harrison, 1991).

As in the 16th century the medical research changed its focus from anatomy to physiology, experimenting on live animals became a staple procedure (Petrossi, 2009). Denying nonhuman animals any emotive or cognitive ability, including the ability to experience pain, facilitated vivisecting them without any ethical considerations. "The question of whether animals are conscious beings or 'mere automata', as Cartesians would have it, is of considerable moral significance given the dependence of modern societies on mass farming and the use of animals for biomedical research" (Colin & Trestman, 2016, n.p.). Ironically, many scientists who rejected religious beliefs would unwittingly cling to the one that deemed animals *the lesser other*. By then, this time-honored prejudice became a scientific "fact." Any claims to the contrary would be deemed anthropomorphic, a grave offense against reason and science. Waldau (2002) provides an in-depth discussion of how such "facts" based on the axiom of fundamental difference between human and nonhuman animals were created.

As late as in the 19th century, Charles Darwin wrote in his work, *The Expression of Emotions in Man and Animal* (1898), that animals, babies, "savages," and the insane, do not feel pain. This extraordinary belief has proven to be time-resistant. At least until 1989 in the U.S.A., veterinarians in training were advised to ignore the signs of what could be construed as feeling pain by animals (Rollin, 1989)."The denial of the experience of pain by animals was so powerful that when the first textbook of veterinary anesthesia (by Lumb & Jones, 1972) was published in the United States in the 1970's, it did not list the control of pain as a reason of using anesthesia" (Rollin, 2002, p. 8). Instead, it was considered a chemical restraint.

David A. Leavens and colleagues (2017) analyzed the studies published in *Animal Cognition* in the past two decades and concluded that due to the lack of scientific rigor most of the research comparing social cognition of apes to humans is methodologically flawed. The systemic interpretive bias against apes and a pervasive belief in human superiority is not supported by empirical evidence. They propose a more effective approach for comparative psychology that focuses on specific individual learning histories in specific ecological circumstances.

Also, in the recent years findings in cognitive ethology (Bekoff, 1993; de Waal, 2013) and animal welfare studies (Fraser, 2008) refocused the lens of scientific inquiry from anthropocentrism to an animal-centered perspective, thus giving a sound platform to Humane Education.

Current developments. In the modern era, the focus of Humane Education was at first solely on children and animal welfare (Grier, 1999). In the nineteenth century's America, the field was developing as a corollary to mushrooming humane societies (Antoncic, 2003; Selby, 2000; Unti & DeRosa, 2003). "The golden age" of Humane

Education, which took place in the first two decades of the twentieth century (Oakley, 2007), was prompted by its appeal as a tool for character building. The very perception made it possible for Humane Education to become a part of school curricula across the United States, even if only nominally (Unit & deRosa, 2003). As any educational field, subject to twists and turns of the socio-political climate of the day, Humane Education dwindled in the subsequent decades, as world wars and external threats motivated cultural shifts.

The current conceptualization of Humane Education as a broad-based field encompassing social justice and environmental ethics, along with animal welfare, comes from the work and activism of several scholars, most notably, Jane Goodall, a British primatologist; Mary Gordon, who established the Canadian school program "Roots of Empathy"; and Zoe Weil, the founder of the Institute for Humane Education, the first of its kind in the U.S.A. Jane Goodall's conservationist efforts to save chimpanzees and their natural habitat were based on creating opportunities for local people in the Gombe National Park. This model has been replicated across Africa (The Jane Goodall Institute, 2010). Goodall's international youth action program, *Roots and Shoots*, that focuses on activities and service-learning projects benefiting local communities, their environments and animals using Knowledge-Compassion-Action Model has been inspirational for educators around the world (see http://www.rootsandshoots.org).

In Canada, the most internationally acclaimed pioneer of Humane Education is Mary Gordon. Her program, *Roots of Empathy*, which focuses on teaching empathy to children and adults, grew from a small Toronto-based kindergarten pilot program in 1996 into an organization, which currently has chapters in all Canadian provinces and many countries across the Globe. Gordon's approach is based on classroom visits of a human

infant and parent. The loving interactions between them provide modeling for students to observe. As a result, pro-social behaviors increase and aggression decreases in participating students (see http://www.rootsofempathy.org/).

Humane Education in Teacher Preparation

In 1996, in the U.S.A., Zoe Weil established the Institute for Humane Education, the first educational institution that trains master's level humane educators in a systematic and scholarly way (see http://humaneeducation.org/home). Her pedagogical model is based on providing accurate information about pertinent social, humane, and environmental issues as well as showing how those issues are interconnected; fostering the 3Cs: Curiosity, Creativity, and Critical thinking; instilling the 3Rs: Reverence, Respect, and Responsibility; and offering positive choices and tools for solving problems to empower people to make informed decisions for themselves and the world (Weil, 2004). The Institute's graduates and their associates have used Weil's approach across K-12 curricula from literacy to foreign languages, social studies, science, and art education (see http://humaneeducation.org/graduate-programs/meet-our-students-graduates/). An excellent example of applying Humane Education, as defined by Weil, to pedagogical praxis is HEART, which stands for *Humane Education Advocates Reaching Teachers* (see http://teachhumane.org). This educational organization promotes Humane Education through student-centered programs called *Humane Living*, geared toward K-3, 4-6, 7-8, and high school students, respectively (see http://teachhumane.org/heart/programs/classroom-programs/). It also offers teacher training and advocacy.

At the post-secondary level, new graduate programs in humane studies are modeled on Weil's approach as well (see http://www.madonna.edu/academics/academic-

programs/mhus). In addition, with interest in human-animal studies growing exponentially in theory and research (DeMello, 2012; Flynn, 2008; Kalof & Fitzgerald, 2007; Shapiro, 2008; Waldau, 2013), as well as with the mushrooming of new human-animal courses and programs across post-secondary institutions in North America and elsewhere (see http://www.animalsandsociety.org/pages/courses), Humane Education seems to be also gaining a momentum (Howard, 2009; Selby, 2000).

Humane Education strategies. Various approaches can be seen as applicable to forming positive attitudes towards animals. With some modification, they can be implemented across grades, from kindergarten to college. Sorge (2009) reports that simply exposing young students to animals in positive contexts that allow for bonding, improves students' attitudes toward them. According to Nicoll, Trifone, and Samuels (2008), the same is true of in-class Humane Education programs for eighth-graders. At the college level, critical pedagogy, understood as the teaching and learning practices designed to develop students' critical consciousness about oppressive social conditions, carries a transformative potential regarding views on animals. Yet, some scholars claim that this potential fails to be realized as critical pedagogy remains solidly anthropocentric and thus renders itself useless outside of the self-imposed boundaries of exclusively human-centered interests (Bell & Russell, 2000; Cavalieri, 2008a). A remedy to the above state of affairs may lie in the total liberation pedagogy proposed by Kahn and Humes (2009), which holistically approaches not only planetary sustainability and social justice, but animal advocacy as well.

Any successful pedagogy needs to be based on a positive exposure and thoughtful experience with the subject of learning. These two elements play a crucial role in developing empathy. This correlates with the *Perception-Action Model (PAM)* of

empathy, postulated by Preston and de Waal (2002). According to the authors, this model explains the most robust effects in empathy experiments such as "familiarity (subject's previous experience with object), similarity (perceived overlap between subject and object, e.g., species, personality, age, gender), learning (explicit or implicit teaching), past experience (with situation of distress), and salience (strength of perceptual signal, e.g., louder, closer, more realistic, etc.)" (Preston & de Waal, 2002, p. 3). The *PAM* model emphasizes neurobiological roots of perception and links it to action. Selecting the venues best suited for de-objectification of animals needs to take into account the distinction between cognitive and emotional empathy, with the latter being linked to personal distress (Daly & Morton, 2008).

Some examples of powerful techniques transforming students' attitudes toward animals include storytelling, perspective-taking, and service learning. Storytelling with its protagonists as multidimensional agents may be an effective way of depicting animals as complex beings (Fawcett, 2000). The research by Peskin and Astington (2004) supports this contention, by showing how the implicit mentalistic context of picture storybooks helps children build representational understanding of other's state of mind. The above findings, though, need to be qualified in the light of the fact that fantasy relates to cognitive rather than emotional empathy (Daly & Morton, 2008), and as such may not lead to attitude changes.

Perspective-taking is another well-researched technique, which seems to improve attitudes towards outgroup members. Although the following studies focus on attitudes toward other humans who are considered as outgroup members, animals are often perceived as the ultimate outgroup members, so their results may shed light on the discussed topic. Shih, Wang, Bucher, and Stotzer (2009) have shown that, while taking

perspective of an outgroup, one improves attitude towards that outgroup and its individual members, this attitude does not transfer to other outgroups. Since perspective-taking is linked to cognitive rather than emotional empathy, the caution with which the previous findings on storytelling/fantasy are interpreted (Daly & Morton, 2008) applies here as well. Equally important, the results of the above studies are weakened by the key methodological limitation, which is not accounting for the instability of change. Eagly and Chaiken (1995) report that attitude change is rarely permanent and is subject to reversion. In addition, an attitude change may not impact changes in behaviour (Kraus, 1995), as several other factors, in addition to attitude, play a role in motivating behaviour. Arbuthnott (2008) lists the following additional factors impacting behaviour: contextual support, intention specificity, and perceived control, feedback about target behaviour, social norms, action difficulty, and habits. According to Arbuthnott, effective education, in addition to targeting values and attitudes, should provide personal action plans that help translating intentions into actions. This is of paramount importance to the theory and praxis[2] of Humane Education.

Service learning, defined as "a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities" (see http://www.servicelearning.org/what-service-learning) is yet another venue for de-objectifying animals. When students plan and carry out projects that aim at benefiting animals, in the process they learn how to assume the perspectives that focus on animal

[2] Paulo Freire defines praxis as "reflection and action upon the world in order to transform it" (Freire, 2000, p.51).

interests rather than the human ones. They also look at individual animals as possessing specific needs, preferences, likes, and dislikes, which helps them become more empathetic. An example of such service learning is the co-operation between Madonna University, Livonia, Michigan, and the Detroit Zoo, where students enrolled in an undergraduate animal-human studies course enrich the habitats of various animals by building species-appropriate play structures, making food-based toys, and planting edible plants (Domzalski, 2009; Proctor, 2012). A similar service course started in 2016 as collaboration between Illinois Wesleyan University in Bloomington, Illinois, Transylvania University, in Lexington, Kentucky, and the Louisville Zoo (Furlong & Furlong, 2017). The course aims at teaching that the study of cognitive ethology entails ethical duties towards animals. In the context of captive animals being studied, that approach entails developing cognitive enrichments for them.

Although there are many service learning projects that have animals as beneficiaries, no extant theoretical models of service learning assumes the possibility of serving animals, so there exists a need for developing a paradigm that would fill that gap. This would help educators involved in service learning negotiate administrative requirements for student service learning engagement (Domzalski & Gatarek, 2017).

The various Humane Education techniques that are discussed in this section represent a plethora of theoretical paradigms. As the field matures, the need for a theoretical model that would situate those various approaches within a unifying conceptual framework becomes evident. In this research study, *The Common Ingroup Identity Model* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000), addressing ingroup versus outgroup behaviors and described in the following section, was used as a basis of Humane Education.

The Conceptual Framework of the CIIM Ingroup versus Outgroup Behaviours

As the overarching goal of Humane Education is to form positive attitudes and behaviours toward those beings perceived as others, with animals being the ultimate Other from the human perspective, it behooves one to take a closer look at research on ingroup versus outgroup behaviours. Studies on ethnocentrism provide helpful insights in this respect. Bizumic, Duckitt, Popadic, Dru, and Krauss (2009) indicated that intergroup ethnocentrism is related to outgroup negativity. Thus, outgroups may arouse adverse feelings and behaviors. In their study on helping strangers, Knafo, Schwartz, and Levine (2009) found that outgroup members are less helped than ingroup members, the difference being more prevalent in embedded cultures, that is, the cultures that emphasize the importance of the ingroup as a whole rather than individuals. Outgroup members may also be less trusted (Foddy, Platow, & Yamagishi, 2009). Outgroup members may be put into extremely negative categories, even dehumanized and excluded from moral consideration through the process of delegitimization, as explained by Bar-Tal (1989). Delegitimization can sanction hostility and aggression towards others.

According to Leyens and colleagues (2000), people hold a tacit belief that their ingroup is more human than any outgroup. This process of differential attribution applies not only to intelligence and language, but also to secondary emotions, which unlike primary emotions, are uniquely human. Authors conceptualize the denial of uniquely human emotions to the outgroup, as infrahumanisation.

According to scholars (Darwin, 1898; Ekman, 1992; Plutchik, 1994), primary emotions are experienced by both humans and animals, whereas secondary emotions are unique to humans (Ekman, 1992). Plutchik (1994) proposed that primary emotions can be observed at all phylogenetic levels and that they are important to the survival of the

individual and the species. He lists eight primary emotions: anger, fear, sadness, disgust, surprise, anticipation, trust, and joy. Ekman (1992) considered joy, fear, anger, disgust, and sadness as primary emotions. All the secondary emotions are, according to him, a mixture of the primary emotions. Different researchers consider different criteria of distinction between primary and secondary emotions thus resulting in lack of agreement among experts on the final list of primary emotions (Ortony & Turner, 1990).

More recently many researchers (Demoulin et al., 2004; Leyens et al., 2000; Rodríguez-Torres at al., 2005), investigated lay-people's conceptions of emotions. They observed that lay-people perceive secondary emotions (e.g., melancholy) as more unique to humans than primary emotions (e.g., anger). Based on the results on their study, Leyens and colleagues (2000) concluded that the categorization into primary and secondary emotions is a spontaneous process that people employ in their everyday perceptions and attributions. There exists considerable evidence (Leyens at al., 2001; Rohmann at al., 2009; Vaes at al., 2012) that people are more likely to attribute uniquely human (secondary) emotions to the ingroup members than to the outgroup members.

Accordingly, Demoulin and colleges (2004) have shown that attribution of specific emotions may play a role in a process of infrahumanisation. Both high- and low-status groups tend to infrahumanize outgroups even when there is no open conflict. Outgroup members are considered emotionally less complex than ingroup members and not possessing exclusively human emotions, thus are presumably viewed as less essentially human (Demoulin et al., 2005).

The study by Paladino et al. (2002) investigated Leyens et al.'s (2000) theory claiming that uniquely human (secondary) emotions tend to be associated with ingroup members while non-uniquely human (primary) emotions tend to be associated with

outgroup members. Four experiments were conducted with Belgians or Spanish - as the ingroups.

In the first experiment the ingroup was Belgian and the outgroup was created using North African names. In the second experiment the ingroup was Spanish and the outgroup was again created by using North African names; the same is true of the third experiment.

In the fourth experiment the ingroup was French-speaking Belgians and the outgroup was created by employing Dutch-Belgian names. Experiment 2 featured negative emotions, while all the other experiments used positive emotions.

In Experiments 1, 2, and, 3, the outgroup was perceived as having a low-status, while in Experiment 4, the outgroup was perceived to possess a high status.

The data were collected by using the *Implicit Association Task*, which measured reaction times of making judgments whether a particular word flashed on a screen described an emotion characteristic of an ingroup or outgroup. In the study using negative emotions, the subjects were judging the compatibility of names with emotion words: two groups of words were flashed: ingroup and positive emotion, and outgroup and negative emotion or ingroup and negative emotion and outgroup and positive emotion. The reaction times of compatibility judgments were collected. In Experiment 3, the ingroup and outgroup names were presented first with emotion words, then with evaluative words.

The results of Experiment 1 showed that while secondary emotions are more strongly associated with ingroup members than with outgroup members, and primary emotions are more strongly associated with outgroup members than with ingroup members, the former association tends to be stronger than the latter one.

The results of Experiment 2 confirmed the results obtained in Experiment 1, but in reference to negative emotions. While Experiment 3 confirmed the findings of Experiment 1, it did not render a significant correlation between emotional and evaluative judgments. Also, experiment 4 confirmed the results of Experiment 1, namely that secondary emotions are more strongly associated with ingroup members than with outgroup members, and primary emotions are more strongly associated with outgroup members than with ingroup members; this remain unchanged regardless of the perceived low or high status of outgroup members (North African names being perceived as having low-status, Dutch Belgian names being perceived as possessing high status).

It is worth noting that both Demoulin and colleges' (2005) and Paladino and colleges' (2002) findings are based on small linguistic and cultural samples, and therefore do not allow for broad cross-cultural comparisons. Replicating these studies within different linguistic and cultural settings could be helpful. In addition, findings of the before mentioned studies should be interpreted with caution as data obtained from university students in the laboratory setting may not be generalizable to the broader population and a natural social setting. Palladino and her colleagues tested their hypothesis using *Implicit Association Task* (*IAT*) where participants had to decide as fast as possible between two categories. Demoulin and his colleges (2005), used the *Wason Selection Task* (*WST*) designed in 1968 by Wason, to test deductive reasoning in the conditional statements "if P, then Q." Although both tools were used in various studies in a similar context it is not clear if extraneous variables such as specific cognitive abilities were controlled for.

A study by Xu, Zuo, Wang, and Han (2009) on the perception of pain proposes neural mechanisms responsible for an emphatic bias towards racial ingroup members.

Their study with Caucasian and Chinese participants suggests that empathic neural responses might be regulated by racial ingroup/outgroup membership.

It would be of interest to examine whether the attributions of primary and secondary emotions as well as pain affect not only perceptions of ingroup and outgroup members but also if they predict intergroup helping. From the point of view of Humane Education, denying pain or secondary emotions to members of outgroups holds interest in reference to ascribing, the so-called uniquely human characteristics to nonhuman animals, and to emotionally charged responses, which such an ascription evokes. Keeping the gap wide between human and nonhuman animals justifies the disadvantaged group's moral exclusion and makes exploitation of its members acceptable (Opotow, 1990). Closing this gap by assigning human emotions and responses to pain to animals may lead to cognitive dissonance in individuals who otherwise view themselves as ethical beings.

The Common Ingroup Identity Model. This extensive literature review supports the conclusion that Humane Education is in need of an evidence-driven theoretical paradigm that would explicate promoting pro-social behaviors by changing stereotypes, and reducing prejudices and negative biases. Such a paradigm would need to be applicable to human-animal relations in addition to inter-human relations. A promising candidate for this role is the Common Ingroup Identity Model proposed by Samuel Gaertner and developed by John Dovidio. Studies conducted within this paradigm explore stereotypes, prejudice, and social relations, both between groups and between individuals. They also examine techniques that help reduce negative biases.

The *Common Ingroup Identity Model* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000) is built on Allport's idea of social categorization (Allport, 1954). It credits social categorization with both reducing and creating intergroup bias. It

postulates decategorization and recategorization as factors changing ingroup boundaries so former outgroup members can be seen as ingroup members. According to Allport (1954), people group others into categories to function more efficiently in a society. This categorization results in creating ingroups and outgroups. People favor ingroup members over outgroup members, and those without group membership, even in randomly assigned laboratory conditions (Gaertner, Mann, Murrell, & Dovidio, 1989).

In Gaertner et al.'s (1989) first seminal study, 360 undergraduate students were arranged in small groups of three participants each. Each group was asked to name itself. Each group was given a scenario that their plane crashed in mid-January in Northern Minnesota; their task was to rank-order ten objects salvaged from the plane in terms of their importance for survival. The discussions were first done in the initial group arrangements of three, and then during the second discussion session, according to the following three conditions: (a) one group of six (two three-member groups merged), (b) six individuals, or (c) two three-person-groups (control condition). The manipulation into three conditions was done by the following strategies: one six-member group and two three-member groups were asked to merge and come up with a new name for the whole group. In the six-individual's condition each participant was asked to come up with a nickname for him or herself. No additional naming manipulation was done with the control group. Further manipulation was done through sitting arrangements in the rooms, types of allowed interactions during the second discussion session (one group condition: focus on consensus; two-group condition: reporting initial group rationales; individuals' group: discussing initial individual rationales), nature of interdependence among the participants (a $10 lottery ticket depending on the effectiveness of solutions given by the groups).

As predicted, participants in one group or individual conditions reported lower bias toward the original ingroup and outgroup members than participants in the two-group conditions. Surprisingly, the mechanism for bias reduction was different for various conditions. In the one-group conditions it was due to more positive evaluation of the former outgroup members, but for the separate-individual conditions it was due to more negative evaluation of former ingroup members.

Subsequent studies (Gaertner, Mann, Dovidio, Murrell, & Pomare, 1990; Gaertner & Dovidio, 2000) show that ingroup favoritism can be countered by decategorization and recategorization. The former is defined as perceiving the members of a given category as individuals. The latter consists of creating super-ordinate categories, which include the members of various original categories (e.g., French-speaking Canadians and English-speaking Canadians being seen as Canadians). The above strategies work well in countering racism and ethnic prejudice (Dovidio, 2001). As evidenced by the cited literature, different studies suggest that such strategies may be useful tools for fighting species-based prejudice, but research applying decategorization and recategorization to Humane Education is rare. Yet, there exist some studies that try to address this evident gap, as the subsequent section demonstrates.

In a series of three studies, Bastian and colleagues (2012) show that exploring similarities between humans and animals may have an impact on speciesist attitudes. The researchers focus on framing of such similarities and report that while comparing animals to humans reduces speciesism, the opposite process, namely comparing humans to animals does not. However, the latter may affect attitudes toward marginalized humans.

Further evidence that exploring animal-to-human similarities versus human-to-animal similarities impacts recategorization comes from the studies conducted by

Costello and Hodson (2010). The researchers have focused their two studies on attitudes toward immigrants. In the first study, exposure to animal-human similarities increased humanization of immigrants in less prejudiced participants, but not in more prejudiced participants. In the second study, in both less and more prejudiced participants, immigrant humanization increased after exposure to animal-to-human similarities, but not after exposure to human-to animal similarities or to human-animal gap. While the above findings are encouraging in terms of applying the *Common Ingroup Identity Model* across species lines, their focus is on attitudes toward a specific group of humans, i.e., immigrants. A logical further step seems to be to investigate how animal-to-human similarities versus human-to-animal similarities impact recategorization, which involves animals, and in turn how such a recategorization influences attitudes toward animals.

In addition to the above strategies, other concepts constituting the theoretical framework of the *Common Ingroup Identity Model* may be applicable to Humane Education and more precisely to exploring the factors responsible for shaping humane educators. This is true of the pivotal concept of *bias*. Dovidio and Gaertner (2010) define it as "an unfair evaluative, emotional, cognitive, or behavioral response toward another group in ways that devalue or disadvantage the other group and its members either directly or indirectly by valuing or privileging members of one's group" (p. 1084). Bias can be analyzed through its three dimensions: (a) type, (b) expression, and (c) focus of orientation. The first dimension can be characterized as stereotypes, prejudice, or discrimination. The expression of bias can be either explicit or implicit, and the focus of orientation refers to either outgroup derogation or ingroup favoritism.

Dovidio and Gaertner (2010) describe stereotypes as a set of shared beliefs about a group, prejudice as an attitude, and discrimination as a type of behaviour. Stereotypes,

defined as a set of over-generalized beliefs about a group or its members associated by negative feelings are used to simplify complex social environments, and allow for quick evaluation and reactions. Many studies indicate that social stereotypes, both individual and collective, are resistant to change (Dovidio, Brigham, Johnson, & Gaertner, 1996; Stangor & Shaller, 1996; Dasgupta & Greenwald, 2001; Wittenbrink, Judd, & Park, 2001; Esses & Dovidio, 2002). Furthermore, according to Paluck and Green (2009), some studies show that instructions to suppress stereotypes may have an effect opposite to the intended one (Galinsky & Moskowitz, 2000). The changes that occur are slow and gradual. They may either consist of changing the intensity of a particular prejudice or changing its substance (Kurcz, 1995).

The fact that stereotypes are difficult to change leads to the question whether their formation can be at all prevented. While their origin is a subject of debate, most researchers agree that stereotypes pertaining to gender, age, abilities, or ethnic minorities form early in life (Aboud at al., 2012; Cameron & Rutland, 2006; Cameron, Brown, & Douch, 2006; Stangor, 2000). As stereotypes originate on both individual and social level, the knowledge about the origination of the former may be particularly useful in discerning what personal experiences are crucial to making humane educators. Pettigrew (1970) shows that individual stereotypes are formed through homogenous emotionally charged personal experiences, which affect the individual differences in the cognitive category width. According to Pettigrew, people differ in how broadly or narrowly they perceive boundaries of various categories. In other words, faced with a particular exemplar, broad categorizers may think of it as belonging to a given category, while narrow categorizers may think that it does not belong to the given category. On the other hand, socially formed stereotypes are shaped by social standards, social modeling,

language, as well as by the process of social categorization (Tajfel, 1982). While there is no consensus as to the effect of stereotypes on behavior, the opposite seems to be true of prejudice. Dovidio defines it as, "an unfair negative attitude toward a social group or a person perceived to be a member of that group" (2001, p. 829). There exists strong empirical evidence pointing to the influence of prejudice on behaviour, yet its mechanisms are not fully understood.

According to Hewstone, Rubin, and Willis (2002), various factors of prejudice have been identified, such as power, group size, or threat. "Members of high- and equal-power groups show more bias than members of low-power groups, and discrimination by members of numerical minorities with high power is especially strong" (p. 585). Analyses of xenophobia and hate crimes against social and ethnic minorities provide extra-laboratory evidence of the role of threat. Perceived threat and incidence of violence is greatest when there is a conjunction of faltering economic growth and a high percentage of immigrant minorities (Hewstone, Rubin, & Willis, 2002).

Dovidio (2001) argues that the concept of social categorization, after Allport (1954), may provide a better framework to understand prejudice. Social categorization influences our perception leading to exaggerating our similarities with the members of the same category and our differences with those belonging to other categories.

Discrimination is defined as inappropriate behaviour toward others based on their group membership (Dovidio & Gaertner, 2010). Discrimination is characterized as negative and overt, and the *Common Ingroup Identity Model* provides ways to eliminate or reduce it. Yet, stereotypes and prejudices may sometimes be implicit and more importantly may remain outside people's awareness while affecting their behaviour (Dovidio & Gaertner, 1999). The existence of aversive negative attitudes, rejected at the

conscious level, adds to the complexity of evaluating one's attitudes and needs to be taken into account in research exploring the factors leading one to become a humane educator.

Ample scores of experimental studies using either helping or decision-making paradigms provide evidence of unconscious discriminatory behaviours (Dovidio & Gaertner, 2000; Gaertner & Dovidio, 2005). Helping paradigm was use by Knafo, Schwartz, and Levine (2009) in their study of helping strangers. The researchers found that outgroup members are less helped than ingroup members, the difference being much bigger in embedded cultures, that is the cultures that emphasize the importance of the ingroup as a whole rather than individuals.

The decision-making paradigm was used by Dovidio and Gaertner (2000) to demonstrate bias in selection of decision involving employment of Black and White candidates. Their study shows that White participants discriminate against Black candidates when the bias is not obvious or can be rationalized by factors other than race, thus preserving participants' egalitarian self-image. The researchers called this attitude an aversive racism (Dovidio & Gaertner, 2000).

According to Gaertner and Dovidio (2010), "intergroup bias, whether it concerns outgroup derogation or ingroup favouritism, explicit or implicit responses, or stereotypes, prejudice, and discrimination, has a common foundation: social categorization" (p.1088). Thus, altering the process of social categorization is key in transforming peoples' cognitive representation of group boundaries, thus reducing bias. To this effect, there exist three empirically tested approaches: (a) decategorization, (b) recategorization, and (c) mutual differentiation (Gaertner & Dovidio, 2000). In order to achieve a decategorization, one can foster intergroup interactions, which allow for seeing outgroup

members as individuals, e.g., English-speaking Canadians and French-speaking Canadians may share experiences that show them as individuals, rather than group members. Allport (1954), in the course of proposing *Contact Hypothesis*, lists certain conditions required for such interactions to be effective: equal status between groups, cooperative intergroup interaction, opportunities for personal acquaintance, and supportive norms (Gaertner & Dovidio, 2000). The recategorization approach, which is based on the *Common Ingroup Identity Model*, constitutes expanding an ingroup structure to include others. It requires interventions that change peoples' perceptions of the membership from two or more groups to one superordinate group. It can be achieved by focusing on shared characteristics present in all superordinate group members. The cognitive representation of the membership mediates the cognitive, affective, and behavioural consequences, which do not require forsaking of previous identities, e.g., English-speaking Canadians and French-speaking Canadians can be categorized as Canadians. In fact, a dual-identity may help to generalize beyond outgroup members into immediate situations (Gaertner & Dovidio, 2000). The phenomenon of mutual distinctiveness in the context of cooperative interdependence is the focus of the mutual differentiation model proposed by Hewstone and Brown (1986) and further discussed by Gaertner and Dovidio (2000). It emphasizes the need for maintaining boundaries and group-distinct expertise and experiences during contact. For example, English-speaking Canadians and French-speaking Canadians may be asked to serve as cultural informants of their respective cultures. The ample evidence supporting the above strategies is weakened by the fact that it comes mostly from the laboratory or from the survey studies, which may not reflect the interdependence of processes that mediate attitude change (Gaertner et al., 1996; Gaertner & Dovidio 2000).

The lack of social context in experimental studies and limitations of surveys warrant caution before recommending specific interventions. As a remedy, the principles of the *Common Ingroup Identity* model were tested by Houlette et al. (2004) in a study conducted in collaboration with the Green Circle staff. The study simultaneously evaluated the effectiveness of the program's interventions. The Green Circle is based on the assumption that helping children serves as a vehicle for bringing people from different groups conceptually into the children's circle of inclusion. The study, encompassing a series of sessions over four week's period, included 830 First and Second Grade students as participants. The pre-test, post-test design involved randomly assigned classes that received one of the three treatment conditions: regular ($N = 35$), enhanced ($N = 17$) and control ($N = 9$). The sample was composed of the first and second graders of both sexes, and reflected the ethnic make-up of the area (60% White, 30% Black, 6% Hispanics, 2.5 % Asian, and 0.5% "other").

All participating classrooms were well integrated with 44% minorities, on average. The pre-test was administered a week before the treatment and the post-test was given a week after. The measures were designed to assess how inclusive students were toward similar and dissimilar others. These measures included self-reported preferences for playing and sharing as well as teacher's ratings of actual behaviours before and after the program. The measures also included: feeling faces, first play choice, and sharing. To evaluate the attitudes towards children that were similar or different than the participants, the researcher used eight drawings of children that varied in gender (boy or girl), colour (Black or White), and body weight (average or overweight). The self-esteem was also measured using an adopted version of Harter's perceived competence scale for children.

In addition, the manipulation check was used for all groups to find out if the structural changes made in the enhanced condition had the intended effect.

The class was used as the unit of analysis. The analysis reflected 3 conditions (regular, enhanced, control) x 2 times (pre-test, post-test). The results were contrary to the expectations as there were no significant differences between any of the three groups on the manipulation check. No effects of the Green Circle program on children's self-esteem or behaviour evaluated by teachers were reported. Furthermore, there were no significant differences between conditions on the measure of feeling faces or on the measure of sharing behaviour.

The statistically significant finding was reported in relation to the Green Circle program's effect on children's selection of the most preferred playmate. The condition x time interaction effect was obtained, $F(2, 58) = 4.74$, $p < .012$, effect size ($\eta^2 = .140$). When the researchers looked at which dimensions (gender, race, weight) affected ratings of the playmate, there was a small but significant decrease over time in the percentage of participants in each regular class that selected the same race preferred playmate and marginally significant decrease in the percentage of students choosing the same sex preferred playmate (the analysis collapsed across the regular and enhanced conditions). There were no condition x time interactions for body type, and 96% of the children in each class selected an average weight child as their choice for first playmate. Notably, weight seems to be the characteristic the most resistant to the Green Circle interventions.

The results of the study indicate that although the Green Circle program did not change children's feelings about playing or sharing with children of different race or sex in general, it did make them more inclusive in the choices of their first playmates. The results, albeit favourable for the *Common Ingroup Identity* model, also point to the

methodological challenges in applying laboratory findings to the less controlled and context sensitive settings.

The *Common Ingroup Identity model*, the contact hypothesis (claiming that intergroup contact reduces bias; Allport, 1954), and various research findings formed a basis for designing interventions aiming at eliminating both implicit and explicit intergroup bias (Dovidio & Gaertner, 1999). Currently used strategies to combat implicit bias may focus on individual or group interventions (Hewstone, Rubin, & Willis, 2002). The former can involve pointing to inconsistencies between explicit beliefs and behaviours, thus arousing negative emotions, such as guilt, that in turn motivate a person to develop more favourable attitudes. The latter can foster intergroup contact that gives an opportunity for more personalized interaction (decategorization) or for redefining group boundaries based on introducing factors such as common goals (recategorization).

Species Justice

Species Justice is a critical framework in direct response to speciesism. It aims at replacing speciesism as a governing principle of human societies' conceptualization of nonhuman animals. As Species Justice is shaped by its opposition to speciesism, a closer look at the latter concept's history and premises is warranted.

Speciesism refers to the exclusion of members of other than human species from the realm of moral consideration. The very term *speciesism* is relatively new, as it entered the English language only in 1970 when Richard D. Ryder used it to describe the arbitrary discrimination based on a species membership, not unlike racism or sexism, which are based on race or gender membership respectively. However, the concept itself has deep roots in religious, philosophical, and scientific views spanning millennia (Singer, 1975). The Western religions, developed in the Middle East—Judaism,

Christianity, and Islam—while including many provisions for ethical treatment of animals, as described before, at the same time maintain an unbridgeable chasm between humans and nonhumans, through their anthropocentric concept of humans only being created in the image of God. Andrzejewki, Pedersen, and Wicklund (2009) expose this attitude in their statement that "Speciesism is the name given to the presumption of human superiority over other animals and their subjugation to oppression based on this belief" (p. 140). The idea of human uniqueness strengthened by Aristotle's *Scala Naturae*, so formative for the development of the Western philosophical thought, ultimately led centuries later to the Cartesian view of animals as automats devoid of feelings (Regan, 1983; Taylor, 2003), which allowed subsequent generations of scientists to experiment on animals without any moral concern for the pain inflicted on their subjects. It is exactly that type of animal use against which Richard D. Ryder first employed the term speciesism (Singer, 1975). The term speciesism popularized by Peter Singer, a leading animal ethicist, had entered the Oxford English Dictionary in 1985, and is now a part of mainstream academic vocabulary. Identifying and defining speciesism has been indispensable in developing Species Justice as a cohesive paradigm.

Dunayer (2004) defines speciesism as "a failure, in attitude or practice, to accord any nonhuman being equal consideration and respect" (p. 5). She argues that speciesism can be as rampant in animal welfare movement as it is in the mainstream practice. She calls this attitude to animals as property an old-speciesism, where animals are treated as a commodity. She contrasts it with the new-speciesism, which extends moral consideration to a larger group of nonhumans, but only those who are similar to humans in some respect, for example in having higher cognitive capacities. Great Apes and cetaceans might be included in that inner circle of moral concern but other "lesser" animals are not.

Dunayer (2004) argues for a nonspeciesism, a position that advocates moral consideration for every sentient being. She suggests that every sentient being should have at least the basic right to life and autonomy. This is consistent with abolitionism, a position that opposes any kind of animal use by humans (Francione & Garner, 2010), which lies at the heart of Species Justice.

Gary Francione (1996, 2008), a forerunner of the abolitionist position on animal rights, argues that animals need only one right, that of not being considered a property. Only when animals are considered as means in themselves and not as resources for human use, we can give them an equal moral consideration.

Francione deems the traditional welfarist approach to the treatment of animals counterproductive to animal liberation. He argues that it is through abolition, not regulation, that we can end animal suffering and exploitation. Francione (1996) considers veganism, the rejection of animals as resources, as a moral imperative of abolitionist approach. The only criterion needed for extending our moral consideration to other being is their sentience.

In the mission statement on his website (see abolitionistapproach.com), Francione (n. d.) expresses his views as follows:

> The mission of this website is to provide a clear statement of an approach to animal rights that (1) promotes the abolition of animal exploitation and rejects the regulation of animal exploitation; (2) is based only on animal sentience and no other cognitive characteristic, (3) regards veganism as the moral baseline of the animal rights position; and (4) rejects all violence and promotes activism in the form of creative, non-violent vegan education.

In the Canadian context, John Sorenson (2016) asserted that "Speciesism is the practice of assigning value to beings based solely on membership in a particular species.

Many consider this a prejudice, like racism and sexism, in that treatment is based on morally irrelevant differences" (p. 8).

Nibert (2002) identifies speciesism as an ideology that legitimizes the existing social order. This set of attitudes, believes, and practices plays a crucial role in economic exploitation of others. Capitalism provides a fertile ground for commodification of other less powerful humans and nonhumans, thus creating pattern of entangled oppression of both groups. Animals have no inherent value but are perceived as objects and treated as products of the production process. This is especially evident in factory farming setting.

One of the central points evoked by the critics of speciesism and its conceptual twin, human exceptionalism, appears to be the existence of "marginal humans," e.g., young human babies or cognitively impaired humans, as they do not possess rationality seen as the basic argument for human exceptionalism. Paola Cavalieri (2012a) points out in her discussion on humanism that the counter-argument brought forward by the proponents of speciesism, namely the distinction between *humanitas* (qualities that make one human) and *hominitas* (biological membership of the human species) with the latter being seen as the ultimate criterion to be employed in moral decisions, does nothing to distance speciesism from other biologically motivated discriminatory views such as sexism (Cavalieri, 2012a, p. 52).

Further compelling argument for Species Justice came in the form of 2012 *Cambridge Declaration on Consciousness* resulting from a meeting of several world's leading cognitive neuroscientists at the University of Cambridge. They concluded that,

> the weight of evidence indicates that humans are not unique in possessing the neurological substrates that generate consciousness. Nonhuman animals, including all mammals and birds, and many other creatures, including octopuses, also possess these neurological substrates. (Cambridge Declaration on Consciousness, 2012, p. 2)

The above declaration has important implications for the standing of speciesism as the traditional point of view, since the discussions on animal consciousness or lack thereof have been at the center of discussions surrounding human exceptionalism.

The importance of theoretical discussions on Species Justice can be clearly seen in their applications beyond the Ivory Tower of the academia. One such iconic example is the Great Ape Project, a movement that started in 1993 with the publication of *The Great Ape Project: Equality beyond Humanity*, by Cavalieri and Singer (Bekoff, 2008, p. 151). Under the umbrella of the above project many leading animal rights ethicists and primatologists, including such household names as Jane Goodall, work toward securing basic rights—to life, to freedom, and not to be tortured—to nonhuman apes. One tangible outcome of their work was the 2008 vote of the Spanish Parliament to grant those rights to great apes, which has far-reaching practical consequences; among them, a prohibition of using apes for medical research.

Another group of animals poised to have their basic rights recognized are cetaceans, as ethicists argue for them based on the animals' complex cognitive and emotional abilities (Cavalieri, 2008b). The first step toward this direction was taken in 2013 by India, which legally recognized dolphins as nonhuman persons. The above decision had immediate practical consequences, as dolphin shows became illegal throughout the country (Bancroft-Hinchey, 2013).

In addition to neuroscience and law, education is another fertile ground for initiatives promoting Species Justice. One such example is *Interspecies Education*, the concept proposed by Andrzejewski and her colleagues (Andrzejewski et al., 2009). It calls for moving in K-12 education from the anthropocentric stance of emphasizing the benefits of animal use for humans toward a more balanced and factually-accurate

approach, where such benefits are analyzed against a wide range of losses for animals and humans alike, from suffering of farm animals, to loss of natural habitats, to human health problems caused by contemporary mainstream diet. *Interspecies Education* would replace the current pedagogical speciesist indoctrination portraying the animals as products and tools for human exploitation with an approach based on the concept of interdependence of humans and nonhumans. Emphasizing such interdependence promotes the idea that our own well-being ultimately depends on the well-being of our environment and that of our planetary companions.

In the recent years, the discussion on speciesism extended outside the realm of Animal Kingdom into the Kingdom Plantae. Philosopher Michael Marder (2013) suggests that we should consider giving vegetal life the core values of autonomy, individualization, self-identity, originality, and essentiality.

Nealon (2016) argues that plants are the life form that is abjected and left behind by humanist biopower. He states that considerations for plant life met with strong resistance from many, including animal studies scholars, showing that no one is immune to speciesist attitudes. "Going forward, the biopolitics debate will need to take into account an even more robust notion of what constitutes 'life' beyond the human" (Nealon, 2016, p. xv).

Arguments were also made for a legal personhood of Nature. In 2012 New Zealand's government acknowledged the status of the Whanganui River as "Te Awa Tupua, an integrated, living whole from the mountains to sea" and recognized the River a legal entity with legal standing and an independent voice (Shelton, 2015).

The above examples may be encouraging from the point of view of the proponents of Species Justice, but the progress in this area is quite slow, as deeply-

entrenched traditional ways of thinking of animals as commodities, and powerful, financially-motivated interests of animal-based industries plan for a rather grim future.

Yet, overwhelmingly negative odds should not absolve engaged academics from trying to find strategies to combat speciesism. Its similarity to racism in terms of the mechanisms underlying both phenomena motivates the proposed here application of the *Common Ingroup Identity Model* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000) to counter speciesism, as the model has been successfully employed to combat racism.

Summary

The literature review supports the three pillars of my theoretical framework: Humane Education, Species Justice, and Common Ingroup Identity Model. It also addresses the main practical application of the study, namely the use of Humane Education in teacher preparation. For this reason, it is divided into four parts: (1) Humane Education: History and current developments, (2) Humane Education in teacher preparation, (3) The conceptual framework of the Common Ingroup Identity Model, and (4) Species Justice.

The first part presents an overarching historical view of Humane Education, from its ancient religious and philosophical roots of human relation to animals, to current developments in Humane Education based on science and cultural shifts. The second part explores research findings that gauge the effectiveness of various classroom-based Humane Education strategies. The third part provides an in-depth review of research studies on ingroup versus outgroup behaviors and then focuses on the Common Ingroup Identity Model (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000) and its

practical implications for Humane Education. The fourth part discusses Species Justice as a response to speciesism and draws parallels to other forms of oppression.

CHAPTER III: RESEARCH DESIGN AND METHODOLOGY

Purpose of the study

This study examined the application of the *Common Ingroup Identity Model* (Gaertner, Dovidio, & Bachman, 1996) to Humane Education. It explored the effectiveness of this model that was implemented in combating racism (Dovidio & Gaertner, 1999), as a potential tool for achieving an even more comprehensive umbrella of tolerance in teacher preparation. In particular, this study explored whether the pivotal *CIIM* techniques, such as decategorization and recategorization, used toward nonhuman animals improve the participants' attitudes toward the targeted group. It also gauged the degree to which those techniques increase the participants' willingness to include animal-centered humane themes in their instruction. The results of the study inform recommendations regarding the inclusion of the *CIIM* strategies and its modifications in teacher preparation curricula.

Research Design

A great deal of consideration was given to the methodological aspects of this dissertation. While I do acknowledge the tension that exists between the quantitative and qualitative researchers who are committed to epistemological fidelity, I have chosen the mixed-methods approach as it best suits my research purpose.

I believe that regardless of whether the researcher subscribes to the view that reality is independent from the observer or that reality is socially constructed, her study has to be rigorous (trustworthy) and adhere to firm methodological criteria of validity (credibility), reliability (dependability) and generalizability (external validity or transferability) (Lincoln & Guba, 1985). A good study has to be congruent and cohesive.

It is congruent when the chosen techniques of gathering and analyzing data are appropriate for the research question, and it is cohesive when it clearly explains all the steps of the research process. I was guided by the above principles while designing and conducting this study.

I am a conscious pragmatist who believes that another important criterion for conducting research is its usefulness. Franklin (2012) suggests a holistic and pragmatic approach when faced with diversity of methods. He posits that if we dispose of qualitative-quantitative categories we will shift our focus from philosophical assumptions to problem-solving strategies. We should have ideological freedom in selecting methodology best suited for solving the research problem.

Pragmatism—present in works of Charles Sanders Peirce, William James, and John Dewey, and more recently those of Richard Rorty, Hilary Putnam, and Robert Brandom (Hookway, 2013)—has gained its place as the philosophical underpinning of the mixed-methods approach. Investigators are no longer concerned with nature of reality but rather with finding solutions to research problems.

In addition to pragmatism, another philosophical framework underling mixed-methods research is the transformative paradigm (Mertens, 2010), which speaks to issues of ethics, privilege, power dynamics, and social justice in research. It assumes that all inquiries involve power struggle and as such need to be acknowledged and addressed. It uses mixed-methods to obtain a view of multiple perspectives and positions. "The transformative paradigm emerged in response to individuals who have been pushed to the societal margins throughout history and who are finding a means to bring their voices into the world of research" (Mertens, 2009, p. 3). The transformative paradigm is built upon four sets of assumptions: axiological, ontological, epistemological, and

methodological (Mertnes, 2012). Ethical considerations include respect for cultural norms and customs. Research should aim at promoting human rights and prosocial change. Ontologically, the transformative paradigm recognizes that multiple realities are shaped by historical, social, political, economic, ethnic, and other values. A privileged group often decides what constitutes a reality. Transformative epistemology assumes that knowledge is socially and historically situated. In order to gain insights into participants' perspectives, a trusting relationship is of essence. Methods should be adjusted to accommodate cultural context; both quantitative and mixed-methods can be used, but inclusion of qualitative, dialogic methods and gaining insights into community perspective is critical (Mertens, 2012).

The methodologically eclectic approach should also take into account the role of the researcher. Since the research environment is more controlled in quantitative designs, the function of the investigator is more straightforward. She has to stay objective and follow the protocol. The role of the qualitative and mixed method researcher is more complex. As a primary instrument of data collection, the researcher is personally involved with the participants. In the transformative paradigm,

> the role of the researcher in this context is reframed as one who recognizes inequalities and injustices in society and strives to challenge the status quo, who is a bit of a provocateur with overtones of humility, and who possesses a shared sense of responsibility. (Mertens, 2007, p. 212)

Taking all the above characteristics of the mixed-methods paradigm, I selected it for its usefulness and robustness in collecting various types of data.

The predominantly quantitative research approach was chosen because of the quantitative measurement of attitude change after a one-time experimental intervention. The quantitative part of this study used the pre-test, post-test control quasi-experimental

design that aimed to discover the impact of *CIIM*-based instructional strategies on attitudes toward animals and toward using pro-animal instructional strategies in the classroom (Creswell, 2008; Gall, Gall, & Borg, 2007). Since this study did not include random selection of participants to groups, a quasi-experimental design was implemented (Creswell, 2008). To further inform this study, qualitative components including an open-ended comment section, as well as an asynchronous online focus group, were used.

Research Questions and Hypotheses

The following research questions were examined:

Research Question 1 (RQ1): Does learning *CIIM*-based decategorization and recategorization toward nonhuman animals change participants' attitudes toward the targeted groups?

Research Question 2 (RQ2): Does learning *CIIM*-based decategorization and recategorization toward nonhuman animals change the perceived likelihood of participants' including animal-centered humane themes in their instruction?

The following research hypotheses correspond to Research Question 1.

Null Hypothesis (RQ1): Teaching *CIIM*-based decategorization and recategorization toward nonhuman animals does not change participants' attitudes toward the targeted groups.

Alternative Hypothesis (RQ1): Teaching *CIIM*-based decategorization and recategorization toward nonhuman animals changes participants' attitudes toward the targeted groups.

The following research hypotheses correspond to research Question 2.

Null Hypothesis 2 (RQ2): Teaching *CIIM*-based decategorization and recategorization toward nonhuman animals does not change the perceived likelihood of participants' including animal-centered humane themes in their instruction.

Alternative Hypothesis 2 (RQ2): Teaching *CIIM*-based decategorization and recategorization toward nonhuman animals changes the perceived likelihood of participants' including animal-centered humane themes in their instruction.

Both Alternative Hypotheses are bi-directional, as, in this novel approach, I could not assume the direction in which the participants' responses will take post-intervention. The level of significance was p =.05—the usual norm for research studies in social sciences and education.

The purpose that guided the qualitative inquiry was to explore in-depth the factors hidden behind the results of the quantitative part of the study. Thus, the overarching qualitative research question was to inspect how factors, be they educational, social, emotional or procedural, shape the trends shown by a quantitative analysis.

Participants

All the participants were students in a graduate program in the field of *Teaching English to Speakers of Other Languages* at a Midwestern medium-size private University in the US. The students were enrolled in one of the two sections of the course entitled *Second Language Acquisition*, which was a three-credit course, taught in a hybrid format with 50% of instruction delivered face-to-face and 50% delivered online. Each intact group of 14 participants was randomly assigned using a coin toss to the Intervention or Control Condition.

The total number of participants from whom data were collected and analyzed was 26, with 13 in the experimental group (one student missed the class with the

intervention) and 13 in the control group (one person missed the pre-test). Out of 26 participants, 19 (nine in the experimental group and ten in the control group) were recipients of a federal grant providing free tuition for ESL Endorsement coursework to K-12 in-service teachers working in school districts with high percentage of English language learners. In addition, two other participants, both in the control group, were K-12 in-service teachers. The remaining five participants (three in the experimental group and two in the control group) were adult-education track students, holding at the time of the study various full-time and part-time jobs not related to teaching.

All of the K-12 teachers held teaching certificates valid in the State where they worked, but none of the adult-education track participants held such a certificate. While K-12 track participants mostly held bachelor's degrees in education, and in some cases even master's degrees in education, adult-education track participants held bachelor's degrees in various fields of humanities and social sciences.

The Experimental Group was more diverse in terms of teaching experience with five participants having five years or less teaching experience and eight participants with more than five years teaching experience. In the Control Group 2 participants were novice teachers and 11 had more than five years of teaching experience

The Experimental and Control Groups were well balanced in terms of group size, a gender distribution (ten females and three males in each group), and age distribution (see Appendix F). The Experimental Group was a bit more diverse in terms of ethnicity and racial background than the control group (two African-American students in the Experimental Group vs. none in the Control Group, one East Indian in the Experimental Group vs. none in the Control Group). Control Group had one Hispanic student while the Experimental Group did not have any. The groups had a similar representation of White

Caucasian participants (six in experimental vs. eight in control) and equal representation of Middle Eastern (three in both groups). Most of the participants, nine in each group, where born in the USA, two in each group were born in Middle East, and one in each group was born in Asia. The religious affiliations were similarly represented in both groups, with eight Christians in the Experimental Group vs. seven in the Control group, three Muslims in each of the groups, one Hindu and one atheist, both in the Experimental group.

In terms of type of area the participants grew up in, four participants in the Control Group were from rural area while all participants in the Experimental Group were from urban or from suburb areas. Two participants in the Experimental Group identified as working class, the rest of the participants in both the Experimental and the Control Group identified as middle class. As for political orientation, five in each group identified as liberal, two in the Control Group vs. four in the Experimental Group identified as conservative, and five in the Experimental and four in the Control were neither liberal nor conservative. Most of the participants (eight in the Control Group and ten in the Experimental group) had companion animals in their childhood. The types of companion animals in childhood represented mostly dogs (six in the Control Group and ten in the Experimental Group), also a small number of cats (two in the Control Group and one in the Experimental Group) as well as other animals such as fish, rodent, reptile, amphibian, and birds (see Appendix F). Six of the participants in the Control Group and six participants in the Experimental Group have companion animals at present time. Seven in each group did not have any pets at the time of study. In terms of the diet none of the participants was vegan or vegetarian. Both groups were also balanced in terms of causes they care for (i.e., environment, social justice, children rights, gender equality,

literacy, and animal welfare). Similar numbers of participants in both groups were also actively engaged in the above causes. All the participants' demographic data are in Appendix F.

Procedure

The intact groups were randomly assigned to one of the two conditions: the *CIIM*-based Intervention in the Experimental Group and the alternative intervention in the Control Group. Prior to instructional intervention, all participants were given a pre-test with two instruments to complete: *Animal Attitude Scale*, developed by Herzog, Betchart, and Pittman (1991), and *Animal-Centered Instruction Scale*, designed by the author for the purpose of this study.

Subsequently, the following week the subjects in the *CIIM*-based Intervention Group participated in *CIIM*-based exercises focused on nonhumans, while the participants in the Control Group participated in alternative exercises unrelated to *CIIM*. The intervention in the CIIM-based Intervention Group consisted of 90-minute long exercises that first decategorized humans and nonhuman animals by having them seen as individuals rather than group representatives, and then recategorized all groups under a shared super-category of sentient beings. The following exercises were included as an intervention:

Exercise I—Introduction (20 minutes): To set the stage for discussions, the researcher started by presenting four overlapping circles: humans, companion animals, farm animals, and wildlife. Then the participants brainstormed on similarities and differences among the four groups: e.g., capacity to feel pain, to express emotions, to learn, to think, to communicate, to build social structures, to fear death, to

worship, to be independent from other groups, to transmit culture, etc. The responses were not recorded and were not analyzed in this study.

Exercise II—Decategorization (40 minutes): To decategorize animals, i.e., to present them as individuals, the researcher shared three video clips, each eight-minute long, and each prefaced by a two-minute explanation situating the clip in the context of the whole video. Each video clip presented a human, a companion animal, a farm animal, and a wild animal as an individual, i.e., displaying agency, respectively. Agency, for the purpose of this project, was defined as acting deliberately to achieve individual goals.

Exercise III—Recategorization (30 minutes): The participants were offered opportunity to provide oral feedback regarding the viewed video clips (20 minutes) and then the researcher stated that based on the video clips, all four groups (humans, companion animals, farm animals, and wild animals) belong to the same super category of sentient beings, and drew a circle encompassing the original four circles (10 minutes).

In the Control Group, the *CIIM* intervention was replaced by the ninety-minute-long activities unrelated to the *CIIM*. The control group lesson plan mirrored in structure the experimental group activities, e.g., 20-minute intro, 40-minute activity with video clips, and 30-minute activity with discussions. Thematically, it related to various social justice issues such as racism, child labour, and present-day slavery. In a week after the intervention, tests, the *Animal Attitude Scale* (Herzog, Betchart, & Pittman, 1991), and *Animal-Centered Instruction Scale* (Gatarek, 2015) were administered again to all participants as the post-test. The performed tests are presented in Tables 1a and 1b.

Table 1a.Tests Performed on Whole Sample

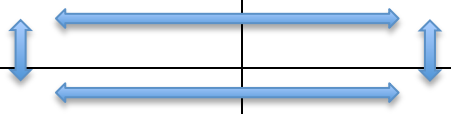
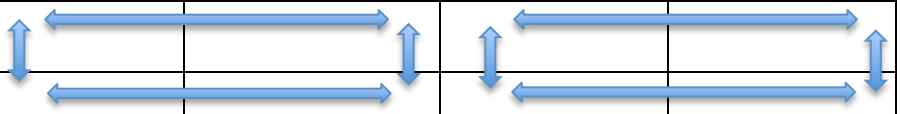
N = 26	*AAS*	*A-CIS*
Pre-test		
Post-test		

Table 1b.Tests Performed on Control and Experimental Group

N = 13	Control Group		Experimental Group	
	AAS	*A-CIS*	*AAS*	*A-CIS*
Pre-test				
Post-test				

Variables

The following independent variables were used: *Treatment Group* (experimental, control) and *Time* (pre-test, post-test). The dependent variables included: *attitude toward animals* measured by the *Animal Attitude Scale*, and *attitude toward using pro-animal instructional strategies in the classroom* measured by *Animal-Centered Instruction Scale*.

Both scales are described in the following section. In addition, a 23-item demographic questionnaire was administered to account for possible influential covariates (age, pets, cultural background, religious affiliation, diet, educational background, etc.).

Measures

Data were collected using two tests: *Animal Attitude Scale* developed by Herzog, Betchart, and Pittman (1991, see Appendix 1), and *Animal-Centered Instruction Scale*

test developed by the researcher specifically for the purpose of this study (see Appendix 2).

Animal Attitude Scale (*AAS*) was used for gathering data relevant to Research Question 1 while *Animal-Centered Instruction Scale* (*A-CIS*) was employed for obtaining data pertinent to the Research Question 2. Both scales were used as the pre-test—one week before the experimental intervention—and as the post-test—one week after the intervention.

Animal Attitude Scale

At the time this study was conducted, *the Animal Attitude Scale (AAS)* (Herzog, Betchart, & Pittman, 1991) consisted of 20 statements regarding the use of animals. Its original version included 29 items, but items 21 through 29 (referring to actions directly helping animals) were subsequently dropped by the authors of the scale as they lumped as one factor. The items are scored to indicate pro-animal attitudes, but 11 items are reverse-worded (see http://paws.wcu.edu/herzog/AnimalAttScale.pdf). The *AAS* was first tested on 144 male and 222 female undergraduate students between ages 17 and 48, who were enrolled in three colleges in North Carolina. The original scale (Herzog, Betchart, & Pittman, 1991) had a high internal consistency with a Cronbach's alpha of .88. The alpha of the new version was .90, indicating good psychometric properties that make it appropriate for use in this study. The respondents were advised to select one response for each statement. There were five response choices: Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. The Animal Attitude Scale has been used in various studies (Beirne & Alagappan, 2007; Daly & Morton, 2008; Taylor & Signal, 2009).

Animal-Centered Instruction Scale

The *Animal-Centered Instruction Scale* (*A-CIS*), constructed by the researcher for the purpose of this study, is a Likert-type scale that measures attitude toward using pro-animal instructional strategies in the classroom. In its final form, used for this study, it consisted of 28 items, of which 25 items referred to various animal-centered instructional strategies and 3 control items that referred to other strategies focused on cultural diversity, globalization, and environmental protection. As suggested by one of the expert judges during the scale development, the control items were less than 10% of all items.

The respondents gauged their willingness to use animal-centered instruction strategies with their students by selecting one of the five possible responses: Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. The items were scored to indicate pro-animal instructional strategies with five items being reverse-worded. Since the A*nimal-Centered Instruction Scale (A-CIS)* was developed for the purpose of this study, to check its validity a panel of experts was employed (Huck, 2004). The initial list of 14 items was submitted to four independent judges (two males and two females) that were currently teaching Humane Education at the university level. All independent judges were also asked for suggestions for items in additional content areas. Their suggestions were reflected in the 32-item version of the *A-CIS*, with ten items being reverse-worded.

The independent judges then rated each item on the 32-item scale for both content relevance and clarity on 5-point scale (1 being very weak, 5 being very strong). Items that were rated as 1 by more than one judge were eliminated in order to increase content validity, resulting in the current 28-item version of the *A-CIS*.

The internal consistency reliability of the final *A-CIS* was obtained. The 28 items of the *A-CIS* produced Cronbach's alpha of 0.74 suggesting that items comprising the instrument are internally consistent. After removing items 4, 10, and 25, Cronbach's alpha improved to 0.79, suggesting that further look into the stronger and more compact *A-CIS* is warranted.

Demographic Questionnaire

Lastly, participants were asked to complete a short 23-item demographic questionnaire (see Appendix 3) related to their sex, age, pets, cultural background, religious affiliation, diet, educational background, teaching experience, volunteering experience, and place of residence (rural/urban).

Participants were given the opportunity to briefly address, in writing, any concerns or suggestions related to either instrument used. These qualitative data obtained from the comments were analyzed for themes and patterns. In turn, they are addressed in the data analysis and the discussion sections of the study.

Focus Group

In addition, participants were asked to take part in an asynchronous online focus group at the end of the study. The online focus group was organized using the host university's Blackboard Learning System. Participation in this part of the research was voluntary with an option of responding anonymously. As a way of introduction, the researcher posted the message (see Appendix E), asking for feedback about the experience of participating in the study, material presented, and the willingness to use the material in a future instruction. Out of 26 invited participants, seven responded. The identification of themes was used as a method of data analysis.

The reason for choosing the asynchronous online focus group as a data collection method was threefold: it was methodological, practical, and theoretical. As a data collection method, it provided an opportunity for discovering an emic perspective of the research participants. In practical terms, the online format provided several advantages over other modalities of data collection such as face-to-face focus groups or personal interviews. Advantages to participants included convenience and the ease of participating at one's own time and place (Zwaanswijk & Van Dulmen, 2014). The theoretical rationale included a conceptualization of focus groups as a collective and emancipatory endeavor that allows for participants to have their own voice in co-creation of knowledge.

Kemberelis and Dimitriadis (2013) discuss "three related functional surfaces of focus group research: the pedagogical, the political, and the empirical" (p. 35). The pedagogical surface of focus group, dialogic and transformative in nature, is exemplified by the work of Paulo Freire. His problem-posing education allowed participants to identify and find solutions to their own problems. This was achieved through a dialogue that produced critical consciousness and praxis.

The political surface emphasizes the importance of social support around significant social issues as demonstrated by various consciousness raising groups such as second- and third- wave feminism. Both utilized focus groups to build feminist theory from the lived experiences of women to enact political change. Focus group participation allowed for empowerment of women as it decentralized the role of the researcher. Unlike other research methods, it helped to bring vital personal issues of participants to the forefront of the political discourse by providing safe spaces and allowing for intimate disclosure (Kemberelis & Dimitriadis, 2013).

And lastly, the empirical surface focuses on the inquiry into the nature of research. It is exemplified by work of Lather and Smithies (1997), among others. In their reflection on the research process, authors positioned both the researcher and the research participants as "bearers of knowledge." Kemberelis and Dimitriadis (2013) expressed this idea by asserting that "The empirical surface highlights the ways inquiry can open deep philosophical questions about the nature of "the research act" itself, including the complex relationship between "self" and "other." (p. 35).

The choice of the online focus group was fitting with the purpose of this study as it allowed for collecting data from different vantage points, allowing participants' own voice to clear any potential "blind spots" (Kemberelis & Dimitriadis, 2013) in the research process. The conceptualization of focus group as dialogic, transformative, and emancipatory is also very much consistent with the stance of humane pedagogy.

The online format of the focus group proved to be to a great advantage to both the researcher and the participants. It provided the much-needed emic perspective without putting time or place constrain on either party. Computer-mediated communications has been an emerging modality, widely used by marketing and health research. Interest in online focus groups as a method of data collection has been rapidly growing in other fields including education (Fox, Morris, & Rumsey, 2007; Galloway, 2011; Kemberelis & Dimitriadis, 2013; Zwaanswijk & Van Dulmen, 2014).

Kemberelis and Dimitriadis (2013) suggest that online focus groups offer many new possibilities for research. They describe the nature of asynchronous and synchronous focus groups by comparing the former to blogs and emails, and the latter to instant messaging. They point to the advantages of both forms to the participants as well as the researcher including anonymity, shorter field time, easier access to busy participants, and

wider reach. Although the anonymity allows for greater disclosure, it may also have a negative effect in a form of deception. Other negative effects of online focus group include difficulty in creating real group dynamics, lack of access to nonverbal information, and difficulty in obtaining emotional feedback. Additionally, Galloway (2011) raised concerns about security, confidentiality, and other ethical issues that may affect participants' safety and wellbeing in a remote location. The researcher needs to take those and other advantages and disadvantages into consideration when designing research project.

The proliferation of the online focus groups raised such important methodological and ethical questions. Kemberelis and Dimitriadis (2013) assert that,

> much conceptual work needs to be done with respect to units of analysis that motivate such research, differences in the specific considerations of different interactional/communicative modalities, and our understanding of private, public, and the ratio between them. (p. 96)

Many scholars also point out to the ethical issues of online focus groups (Buchanan & Ess, 2009; Mahon, 2014; Kemberelis & Dimitriadis, 2013). Those issues include informed consent, confidentiality, anonymity, privacy, data security, detecting deception, transparency, and control of content, among many others. Kemberelis and Dimitriadis (2013) argue that the traditional conceptualization of ethical issues in research that focuses on individuals has to shift to include the ethical issues of the community. These authors claim that,

> We would add here that our methods and methodologies have yet to catch up with the new and emergent social spaces …Indeed, there is a great deal of conceptual and methodological work we need to do to develop tools that will allow us to explore and understand these worlds and their potential fully. (p. 98).

Despite ethical tensions, focus groups have proven to be a fruitful methodological tool whose analysis brings forth valuable insight. "Focus group analysis is a deliberate,

purposeful process. It consists of four distinct and critical qualities. It is systematic, uses verifiable procedures, is done in a sequential manner and is a continuing process." (Krueger & Casey, 2009, p.128).

In this study the identification of themes was used to analyze data obtained form the online focus group. The identification of themes is the most fundamental technique in analyzing qualitative data (Ryan & Bernard, 2003). **"**In qualitative research, themes (also called categories) are broad units of information that consist of several codes aggregated to form a common idea" (Creswell & Poth, 2018, p. 328). Bernard and Ryan (2010) define themes as particular instances or expressions of ideas. The importance of a theme is related to many factors, but pervasiveness and frequency with which it appears are among the most important (Opler, 1945).

In the context of textual analysis, Saldana and Omasta (2018) refer to a theme as "an extended phrase of sentence that identifies and functions as a way to categorize a set of data into a topic that emerges from a pattern of ideas" (p. 230). Themes can emerge from codes and categories, or alternatively, they can be constructed from looking at reoccurring ideas in the data.

Saldana and Omasta (2018) further suggest that in order to truly identify a theme, the researcher needs to go beyond a topical sentence, and look for incipient tensions and concerns expressed by participants.

Ethical Considerations

Ethical considerations need always remain at the forefront of any research project—this study being no exception. Addressing the many possible ethical scenarios is a difficult and a complex process. The researchers need to be vigilant not only at the preparatory stages for a study, but also while it is in process, to ensure the ethical

challenges are being addressed. In addition to the standard ethical dilemmas such as privacy, confidentiality, and procedures, including informed consent, I have also considered issue of deception. In my research I have opted for providing information about the goals of the study before and after the data collection to ensure transparency.

My concern with ethical issues was especially important, as my research was conducted in another country. Since researcher's conduct depends not only on what is legal and ethical in home and host jurisdiction, her integrity is of outmost importance. Thus, through my research process I was guided by Tilley's (1998) notion of a respectful researcher, which incorporates caring attitude, reciprocity, and most of all, ongoing refection on one's assumptions and research practices.

In addition, I always kept in mind the many differences between methodological approaches and the epistemological assumptions behind them. Eikeland (2006) introduces the term "condescending ethics" to represent the traditional researcher's position as an outsider (objective in quantitative studies or neutral in qualitative inquiries) to the research process. Both positions lead to the "othering" of human beings as research subjects rather than research participants. The aspect of "the other" has been of particular importance to my study conducted from the humane stance.

The clearance from the Research Ethics Board for the study was sought from both the University of Windsor and from the host institution of a mid-sized private Midwestern University. Every subject was given a consent form to sign prior to his/her participation in the study and was able to withdraw from it at any time without giving a reason. All precautions were taken to keep the collected individual data confidential and only aggregated data were made available to third parties.

Every effort was made to minimize the feeling of obligation to participate. At each new stage of the data collection process, the participants were reminded that they could withdraw from the study at any time without giving a reason. This was especially important, as the principal investigator was also a sessional instructor in the program from which participants were recruited, though not teaching any of the students at the time of the study.

In addition, a post-study equalizing presentation of *CIIM*-based techniques identical to the intervention used in the study was made available to control group participants after the completion of data collection. All participants were given access to Humane Education teaching resources and materials via Blackboard learning platform.

Finally, in the view that both the test questions and the intervention could cause some level of discomfort in some participants due to the possible differences in their worldviews, explicit emphasis was made that there are no right or wrong answers to questionnaires' questions.

Summary

This chapter started with the restatement of the purpose of the study, which is an examination of the Common Ingroup Identity Model to Humane Education. It was followed by an in-depth rationale for choosing a predominantly quantitative mixed-method design to achieve that purpose. Subsequently, Quantitative Research Questions, Hypotheses and the Qualitative Research Question were listed. The next section described the participants of the study with an emphasis on their demographic information and a comparison between the experimental and control group in this regard. A description of the procedure ensued, sufficiently detailed to enable a replication of the study. It was followed by the listing of independent and dependent variables and then by

the information on both quantitative measures used in the study: *Animal Attitude Scale* and *Animal-Centered Instruction Scale.* An emphasis was given to the latter, as it had been developed specifically for this study. Next, the *Demographic Questionnaire* and its use for the quantitative and qualitative analyses was mentioned, which served as a transition for introducing the qualitative part of the design. An in-depth literature-based discussion of the rationale for the use of focus groups, including its benefits and weaknesses, followed. The Chapter concluded with the section on ethical considerations and the clearance from the Research Ethics Boards from both the University of Windsor and from the host institution.

CHAPTER IV: DATA ANALYSIS

The purpose of this chapter is to present the analysis of data gathered in order to answer the research questions posited in this study. The methods described in Chapter III included a quasi-experiment and an asynchronous online focus group. Quantitative data were collected through two surveys conducted pre- and post-intervention, to determine if an exposure to the *CIIM*-based presentation about nonhuman animals changes the attitudes of participants' toward including animal-centered humane themes in their instruction. The quantitative data were also collected to determine if an exposure to the *CIIM*-based presentation changes participants' attitudes toward nonhuman animals.

In addition to the quantitative data analysis the qualitative data were examined for themes and patterns in order to shed some further light on participants' attitudes toward animals, their willingness to include animal issues in their instruction, as well as their view of the research process.

Quantitative Data

Data were collected pre- and post-intervention from members of two intact groups using two attitude scales: *Animal Attitude Scale* (*AAS*, Herzog, Betchart, & Pittman, 1991) containing 20 items (see Appendix A), and *Animal-Centered Instruction Scale (A-CIS),* designed for this study, containing 28 items (see Appendix B). In addition, a 23-item demographic questionnaire (see Appendix C) was administered to account for possible influential covariates (age, pets, cultural background, SES, religious affiliation, diet, educational background, etc.). These demographic items were based on the review of the literature that pointed to correlations relevant to attitudes towards animals and other information that was thought to be pertinent to describing the samples.

All data were imported into the statistical analysis software SPSS (version 24), checked for errors, and negatively worded items were reverse coded prior to analysis. The data file contained 129 variables, which included the participants' identification number, demographic information, group status (experimental or control), 48 pre-test items, 48 post-test items from both the *AAS* and the *A-CIS*, as well as seven composite variables that the *A-CIS* questions were grouped into. The seven composite variables of the *A-CIS* for both pre-test and post-test included: *Animals in Science, Education, and Research* (questions 7r, 21r, 22, 23, 24r), *Animals in Entertainment* (questions 6r, 9r, 15r), *Wildlife* (questions 17, 18r, 19r, 20r, 26), *Farm Animals* (question 4), *Companion Animals* (questions 5, 25r), *Humane Education Issues* (questions 1, 2, 3, 10, 16, 27, 28), and *Not-Animal Related Issues* (questions 8, 11, 12, 13, 14). The questions with the letter '*r'* are reverse-worded questions (reverse-worded questions 6, 7, 9, 15, 18, 19, 20, 21, 24, 25). Prior to creation of composite variables, all negatively worded items were reverse-coded so as to match the direction of the rest of the items in each cluster.

Reliability of the *A-CIS*. Reliability of the *A-CIS* was tested using Cronbach's alpha to check for internal consistency of this new instrument. Cronbach's alpha is widely used measure of reliability (Vaske, Beaman, & Sponarski, 2017). It measures the correlation between items, as the score on one item should predict the score on another item designed to measure the same attribute (Connelly, 2011). Cronbach's alpha of 0.70 is generally accepted as a cut point for internal consistency reliability (Tavakol & Dennick, 2011). Cronbach's alpha has its limitation and its value is affected by the following: number of items in a scale, item intercorrelations, and dimensionality (Vaske, Beaman, & Sponarski, 2017). The 28 items of the *A-CIS* produced Cronbach's alpha of 0.74 suggesting that items comprising the instrument are internally consistent. After

removing items 4, 10, and 25, Cronbach's alpha improved to 0.79, suggesting that a further look into the stronger and more compact *A-CIS* is warranted. The criteria for removal of an item was if its exclusion would result in a Cronbach's alpha greater than 0.75 (See Table in Appendix F). At this time, given the circumstances of the study, the researcher analyzed the intact version of the *A-CIS*. Further discussion on this issue is presented in the Discussion of the Results.

Convergent validity of the *A-CIS*. Based on the similarity of constructs, it was posited that convergent validity would be demonstrated by a positive correlation between the mean scores on the new *A-CIS* and the well-established *AAS* (Herzog, Betchart, & Pittman, 1991). On the pre-test comparison, a Pearson's coefficient of correlation r =.532, and significance of this result p =.006, as well as the post-test Pearson's correlation coefficient r =.731, and its statistical significance $p < .001$, demonstrated strong convergent validity of the *A-CIS* with the *AAS* (Herzog et al., 1991).

Description of demographic data. Quantitative data were collected from members of two intact classes. All the participants were students in a graduate program in the field of *Teaching English to Speakers of Other Languages* at a Midwestern medium-size private university in the USA.

The total number of participants from whom the data were collected and analyzed was 26, with 13 in the Experimental Group and 13 in the Control Group. Out of 26 participants, 21 were K-12 in-service teachers. The remaining five participants were adult education-track students, holding at the time of the study various jobs not related to teaching.

The Experimental Group was more diverse in terms of teaching experience, with five novice teacher participants (i.e., having up to five years of teaching experience) and

eight participants with more than five years teaching experience. In the Control Group, two participants were novice teachers and ten had more than five years of teaching experience. The five-year mark that divided novice and veteran teachers was chosen based on research studies that looked into teacher's attrition during the first five years of their teaching career (Ingersoll & Smith, 2003).

The Experimental and Control Groups were well-balanced in terms of group size, a gender distribution (ten females and three males in each group), and age distribution (see Appendix G). The Experimental Group was more diverse in terms of ethnicity and racial background than the Control Group (two African-Americans in the Experimental Group vs. none in the Control Group, one East Indian in the Experimental Group vs. none in the Control Group). Control Group had one Hispanic participant, while the Experimental Group did not have any. The groups had a similar representation of White Caucasian participants (six in Experimental vs. eight in Control) and equal representation of Middle Eastern (three in both groups). Most of the participants, nine in each group, were born in the USA, two in each group were born in Middle East, and one in each group was born in Asia. The two main religious affiliations for the region were similarly represented in both groups, with eight Christians in the Experimental Group vs. seven in the Control Group, and three Muslims in each of the groups. The Experimental Group had slightly more religious diversity with the addition of one Hindu and one atheist.

In terms of place of residence the participants grew up in, four participants in the Control Group were from rural area while all participants in the Experimental Group were from suburban or urban areas. Two participants in the Experimental Group identified as working class, while the rest of the participants in both the Experimental and the Control Groups self-identified as middle class. In terms of political affiliation, five in

each group self-identified as liberal, two in the Control Group vs. four in the Experimental Group identified as conservative, and five in the Experimental and four in the Control were neither liberal nor conservative.

Most of the participants (eight in the Control Group and ten in the Experimental Group) had companion animals in their childhood. The types of companion animals in childhood represented mostly dogs (for six participants in the Control Group and ten in the Experimental Group), also a small number of cats (for two participants in the Control Group and one in the Experimental Group) as well as other animals such as fish, rodent, reptile, amphibian, and birds (see Appendix G). Six of the participants in the Control Group and six participants in the Experimental Group had companion animals at the time of the study. Seven in each group did not currently have any pets.

In terms of the diet, none of the participants was vegan or vegetarian. Both groups were also balanced in terms of causes they cared for (i.e., environment, social justice, children rights, gender equality, literacy, and animal welfare). Similar numbers of participants in both groups were also actively engaged in the above causes. All information from the demographic questionnaire is compiled in the table (see Appendix G).

Comparison of the experimental and control groups on the *AAS* and *A-CIS* pre-intervention scores. To determine if the scores on the *AAS* and *A-CIS* questionnaires were significantly different between the Control and the Experimental Groups prior to the intervention, an independent-samples *t*-test was computed. No statistically significant difference was found on the *AAS* answers between the two groups ($t(23) = -.47$, $p = .64$). The mean *AAS* score for the Control Group ($M = .46$, $SD = .44$, $N = 13$) was not significantly different then the score of the Experimental Group ($M = .57$, $SD = .70$, N

=13). The result of the independent-samples *t*-test indicates that the Experimental and the Control Groups had similar attitudes towards nonhuman animals prior to the intervention.

Similarly, there was no significant difference found between the groups on the *A-CIS* questionnaire ($t(24) = -.13$, $p = .89$). The mean score for the Control Group ($M = .47$, $SD = .36$) was not significantly different then the score of the Experimental Group ($M = .49$, $SD = .39$). The result of the independent-samples *t*-test indicated that the Experimental and the Control Groups had similar attitudes towards teaching about nonhuman animals prior to the intervention.

Consistency of participants' responses on *AAS* and *A-CIS*. A paired-samples *t*-test was employed to compare the group's means on the pre-test and post-test for *AAS* and *A-CIS* in order to determine if the participants' answers on the two measures remained consistent.

First, the paired-samples *t*-test was calculated comparing the mean scores of the pre-test and post-test on *AAS*. No significant difference was found ($t(23) = -1.09$, $p > .29$). The mean *AAS* score on the pre-test ($M = .54$, $SD = .56$, $N = 24$) was lower, but not significantly different from the post-test ($M = .60$, $SD = .60$, $N = 24$).

In addition, the paired-samples *t*-test was used to compare the mean pre-test and post-test scores on *A-CIS*. The mean *A-CIS* score of the pre-test ($M = .48$, $SD = .37$, $N = 26$) was lower, but not significantly different from the post-test ($M = .54$, $SD = .39$). No statistically significant difference was found ($t(25) = -1.49$, $p > .15$, $N = 26$).

Participants remained consistent, as evidenced by the results of a correlation that compared participants' mean scores on *AAS* and *A-CIS*, pre- and post-intervention. For both questionnaires correlation was strong and significant. For the questionnaire *AAS*, a Pearson's coefficient of correlation was strong and positive, $r = .87$, and similarly for the

questionnaire *A-CIS*, a Pearson's *r* =.82. The results show that 67% variability in post-test *AAS* answers corresponds to variability in pre-test *AAS* answers, and that 76% variability for questionnaire *A-CIS* on post-test answers is related to variability in pre-test *A-CIS* answers. Correlations were positive; overall participants in both groups appeared to be consistent in pre- and post- answers to questionnaire *AAS* and questionnaire *A-CIS*. The results of pre- and post- *AAS* and *A-CIS* scores for all participants are presented in Table 2.

Table 2.

The Results of Pre- and Post- *AAS* and *A-CIS* Scores for All Participants

		M	*SD*	*N*
AAS	Mean of the Pre *AAS* Scores	.54	.57	24
	Mean of Post *AAS* Scores	.60	.60	24
A-CIS	Mean of the Pre *A-CIS* Scores	.48	.37	26
	Mean of Post *A-CIS* Scores	.54	.39	26

Testing of hypotheses. To test the first research hypothesis, a paired-samples *t*-test was computed for both Control and Experimental Groups. No statistically significant difference was found in any of the groups. In the Control Group, the difference between the pre- and post-*AAS* scores was small (i.e., [mean of pre- *AAS*] – [mean of post- *AAS*] = -.05; $t(11) = -.66$, $p = .525$). In the Experimental Group, the difference was also small (i.e., [mean of pre- *AAS*] – [mean of post- *AAS*] = -.08; $t\ (11) = -.84$, $p = .416$). Teaching *CIIM*-based decategorization and recategorization toward nonhuman animals did not significantly change participants' attitudes toward the targeted groups.

To test the second research hypothesis, a paired-samples *t*-test was computed for both Control and Experimental Groups. No statistically significant difference was found in any of the groups. In the Control Group, the difference between the pre- and post- *A-CIS* scores was small (i.e., [mean pre- *A-CIS*] – [post- *A-CIS*] = -.04; $t(12) = -.78$, $p = .452$). In the Experimental Group, the difference was also small (i.e., [mean pre- *A-CIS*] – [post- *A-CIS*] = -.08; $t(12) = -1.29$, $p = .219$). Teaching *CIIM*-based decategorization and recategorization toward nonhuman animals did not significantly change the perceived likelihood of participants' including animal-centered humane themes in their instruction.

Based on these results neither of the two Null Hypotheses could be refuted. In order to have a closer look at the data, further analysis was conducted on the individual item level for the questionnaires *AAS* and *A-CIS*. In addition, analysis on the composite variable level for questionnaire *A-CIS* was performed. The results of these analyses are presented in the next section.

Item analysis of questionnaire AAS. In the Control Group there was a statistically significant increase from pre- ($M = -.85$, $SD = .80$) to post- intervention ($M = -.31$, $SD = .75$) on item 16 (i.e., "Continued research with animals will be necessary if we are ever to conquer diseases such as cancer, heart disease, and AIDS"). The difference, (pre-M_{16}) – (post M_{16}) = - .54, resulted in a significant paired-sample *t*-test: $t(12) = -2.50$, $p = .028$. The remaining 19 items were not statistically significantly different between the pre-intervention and post-intervention. The following 11 items increased post-intervention, albeit only one significantly: 4, 7, 8, 10, 13, 14, 15, 16, 18, 19, and 20. The mean participants' responses on eight items decreased post-intervention: 1, 2, 3, 5, 6, 11, 12, and 17, while the mean value of responses to item 9 did not change.

In the Experimental Group there was no statistically significant differences on any of the items pre- and post-intervention. The highest (non-significant) difference was on item 1 (i.e., "It is morally wrong to hunt wild animals for sport"). Ten items that increased post-intervention, though not significantly, were: 1, 5, 7, 12, 14, 15, 16, 17, 18, and 19. The average responses to the subsequent five items did not change: 2, 3, 6, 8, and 20, while for five items: 4, 9, 10, 11, and 13, the average values decreased post-intervention.

Therefore, on items 1, 4, 5, 10, 12, 13, and 17, the post-intervention scores changed in opposite direction in the two participants' groups (e.g., on item 1, the post values in the Control Group decreased, while in the Experimental Group, they increased[3]). Post-intervention scores on items 7, 11, 14, 15, 16, 18, and 20 changed in the same direction in both groups (on all items except the item 11, the scores increased, while on item 11 decreased). On items 2, 3, 6, 8, 9, and 20, there was no change in one of the groups.

Item analysis of questionnaire *A-CIS*. In the Control Group there was no statistically significant difference between the average values on items pre- and post-intervention. The mean values on the following16 items increased, though not significantly: 1, 2, 3, 4, 5, 8, 10, 11, 13, 17, 19, 21, 22, 23, 26, and 27. No change was noted on mean values of item 24 (i.e., "In my classroom, I would like to enrich my students' experiences with age appropriate content by… collecting insects living near us for a science project"). The mean values on the following eleven items decreased post-intervention: 6, 7, 9, 12, 14, 15, 16, 18, 20, 25, and 28.

[3] This change was noted if the difference existed at least at the first decimal.

The Experimental Group showed statistically significant increase on a positively worded item (i.e., 22) and significant decrease on the three negatively worded items (i.e., 6, 21, and 24) post-intervention:

- Item 6 (i.e., "In my classroom, I would like to enrich my students' experience with age appropriate content by…Discussing the educational value of sea worlds") $t(12) = -2.55$, $p = .025$; (i.e., pre-intervention: $M_6 = 1.0$, $SD_6 = .71$; post-intervention: $M_6 = .38$, $SD_6 = .96$);
- Item 21 (i.e., "…Dissecting frogs for educational purposes") $t(12) = -2.21$, $p = .047$; (i.e., pre-intervention: $M_{21} = -.15$, $SD_{21} = 1.07$; post-intervention: $M_{21} = -.69$, $SD_{21} = 1.1$)
- Item 22 (i.e., "…Using electronic alternatives to dissecting frogs") $t(12) = -2.31$, $p = .040$; (i.e., pre-intervention $M_{22} = .62$, $SD_{22} = .77$; post-intervention $M_{22} = .92$, $SD_{22} = .76$)
- Item 24 (i.e., "…Collecting insects living near us for a science project") $t(12) = -2.86$, $p = .014$; (i.e., pre-intervention $M_{24} = .23$, $SD_{24} = 1.2$; post-intervention $M_{24} = -.62$, $SD_{24} = .96$).

The following 13 items increased, though not all significantly: 1, 4, 6, 7, 9, 15, 17, 18, 19, 21, 22, 24, and 25.

No change was noted on the mean values for six items: 3, 10, 12, 16, 20, and 27.

The mean values on the following nine items decreased, but not significantly: 2, 5, 8, 11, 13, 14, 23, 26, and 28.

Post-intervention, the average scores of the Control and Experimental Groups changed in opposite direction on the following items: 2, 5, 6, 7, 8, 9, 11, 13, 15, 18, 23, 25, and 26. On items 1, 4, 14, 17, 19, 21, 22, and 28 the change was in the same direction

(on all except for 14 and 28, the values increased post-intervention). For items 3, 10, 12, 16, 20, 24, and 27, the change did not happen in one of the groups.

Analysis of composite variables of questionnaire *A-CIS*. The seven composite variables were created and their pre- and post-intervention values analyzed using the paired-samples *t*-test. There were no statistically significant differences between pre- and post-intervention mean values in the Control Group on any of the composite variables. A slight positive change was noted post-intervention on the mean values of all but two composite variables: *Using Animals in Entertainment* and *Wildlife*, which showed slight decrease after the intervention.

In the Experimental Group, there was a statistically significant increase on two composite variables: *Using Animals in Science, Education, and Research* ([mean pre-] – [mean post-] = -.32, *SD*= .40, $t(12) = -2.88$, $p = .014$), and *Using Animals in Entertainment* ([mean pre-] – [mean post-] = -.40, *SD* =.46, $t(12) = -3.15$, $p = .008$). Two other composite variables (*Farm Animals* and *Companion Animals)* increased after the intervention, though not significantly, two slightly decreased (Humane Education and Non-animal Related), while *Wildlife*, which did not change at all.

Analysis of demographic variables. In order to account for possible influential covariates, all demographic variables were examined, first in relation to the mean scores on *AAS* and *A-CIS* questionnaires, then for each individual item, and lastly for the composite variables.

***Age*.** There was no statistically significant correlation found between participants' age and the mean score on pre-test *A-CIS* (Pearson's $r = -.06$, $p = .77$). The correlation between age and the mean score on pre-test *AAS* was also not statistically significant (Pearson's $r = .11$, $p = .61$).

Overall, based on age of the participants, no statistically significant differences were found for items or composite variables for questionnaire *A-CIS*.

Male vs. female comparison. To determine if the scores on the *AAS* and *A-CIS* questionnaires were significantly different across the male and female participants, an independent-samples *t*-test was conducted between the pre- and post-intervention scores on *AAS* and *A-CIS*. A statistically significant difference was found on the pre-intervention mean *AAS* scores ($t(23) = -2.58$, $p = .017$). The mean score for the male group ($N = 5$, $M = -0.02$, $SD = .48$) was significantly lower than the score for the female group ($N = 20$, $M = .64$, $SD = .52$). The results of the independent-samples *t*-test indicated that the females had significantly better attitude towards nonhuman animals prior to the intervention.

This difference persisted post-intervention. A statistically significant difference was found on the post-intervention mean *AAS* scores ($t(23) = -2.09$, $p = .048$). The mean score for males ($N = 6$, $M = .19$, $SD = .66$) was significantly lower than the score for females ($N = 19$, $M = .73$, $SD = .52$).

There was no significant difference between males and females on the pre-intervention mean *A-CIS* scores ($t(24) = -1.74$, $p = .095$). The mean score for males ($N = 6$, $M = .26$, $SD = .28$) was lower, but not significantly different than the score for females ($N = 20$, $M = .54$, $SD = .37$).

There was no significant difference between males and females on the post-intervention mean *A-CIS* scores ($t(24) = -1.56$, $p = .132$). The mean score for males ($N = 6$, $M = .33$, $SD = .36$) was lower, but not significantly different then the score for females ($N = 20$, $M = .61$, $SD = .38$).

The results of the independent-samples *t*-test indicate that the male and female participants had similar attitudes towards teaching about nonhuman animals prior to and

after the intervention. The scores in both groups increased post intervention although not significantly.

Table 3.

Pre- and Post- *AAS* and *A-CIS* Scores for Male and Female Participants

		N	*M*	*SD*
Pre-intervention AAS	Male	5	-.02	.48
	Female	20	.64	.52
Post-intervention AAS	Male	6	.19	.66
	Female	19	.73	.52
Pre-intervention A-CIS	Male	6	.26	.28
	Female	20	.54	.37
Post-intervention A-CIS	Male	6	.33	.36
	Female	20	.61	.38

The pre- and post-intervention comparison of *A-CIS* mean values showed statistically significant difference among females for items 6 (In my classroom, I would like to enrich my students' experience with age appropriate content by…"*Discussing the educational value of sea worlds*"), 9 ("*Using videos showing animals performing tricks*"), 21 ("*Dissecting frogs for educational purposes*"), 24 ("*Collecting insects living near us for a science project*"), and 25 ("*Engaging students in caring collaboratively for a classroom pet*"). No statistically significant differences were found among males on pre- and post-intervention scores on any of the *A-CIS* items.

There were no statistically significant differences on pre- and post-intervention scores on any of the composite *A-CIS* variables for either male of female participants.

Place of residence. To compare the surveys' results based on the three types of residence when growing up, the Kruskal-Wallis *H* test was performed. There were no statistically significant differences between urban, rural, and suburban sub-groups within

the Experimental and Control Groups on either the *AAS* or the *A-CIS*. The results indicate that the sub-groups' attitudes towards animals and attitudes regarding including animal-centered humane themes in their instruction did not differ significantly from each other. The place of residence when growing up did not appear to influence the results on any of the *A-CIS c*omposite variables.

Teaching experience. There was no statistically significant difference between participants based on their teaching experience for the whole sample on pre-intervention *AAS* ($t(22) = 1.27$, $p = .218$). Seasoned teachers' mean score ($N = 17$, $M = .40$, $SD = .56$) was lower, though not significantly, than the mean score of novice teachers ($N = 7$, $M = .73$, $SD = .60$).

However, there was a statistically significant difference between participants based on their teaching experience for the whole sample for the pre-intervention *A-CIS* ($t(23) = 2.34$, $p = .029$). Seasoned teachers' mean score ($N = 18$, $M = .36$, $SD = .26$) was significantly lower, than the mean score of the novice teachers ($N = 7$, $M = .71$, $SD = .50$).

The novice teachers scored significantly higher than the experienced teachers on the composite variable *Humane Education* for the pre-intervention *A-CIS* ($t(23) = 3.27$, $p = .004$). The mean score for the novice teachers was $M = 1.26$ ($N = 7$, $SD = .21$), while the initial mean score for the experienced teachers was $M = .60$ ($N = 19$, $SD = .84$). This result shows that novice teachers were from the start more positive about Humane Education than their seasoned counterparts. There were no statistically significant differences on other composite variables.

In the Control Group, an independent samples *t*-test showed no statistically significant difference on pre-intervention and post-intervention between novice and veteran teachers on *A-CIS.* In the pre-intervention condition, $t(10) = 2.21$, $p = .51$, and the

post-intervention condition, $t(10) = 2.01$, $p = .072$. The mean score for the novice teachers pre-intervention was $N = 2$, $M = .87$, $SD = .53$, while the mean score for the experienced teachers was $N = 10$, $M = .35$, $SD = .27$. Post-intervention, the mean score for the novice teachers was $N = 2$, $M = .91$, $SD = .43$, whereas the mean score for the experienced teachers was $N = 10$, $M = .40$, $SD = .32$.

In the Experimental Group, an independent samples *t*-test showed no statistically significant difference on pre-intervention, but a statistically significant difference between novice and veteran teachers on post-intervention *A-CIS*; in the pre-intervention condition, $t(11) = 1.23$, $p = .25$, and the post-intervention condition, $t(11) = 2.23$, $p = .048$.

The mean *A-CIS* score for the novice teachers pre-intervention was $N = 5$, $M = .65$, $SD = .53$, while the mean score for the experienced teachers was $N = 8$, $M = .38$, $SD = .25$.

Post-intervention, the mean *A-CIS* score for the novice teachers was $N = 5$, $M = .85$, $SD = .40$, whereas the mean score for the experienced teachers was $N = 8$, $M = .40$, $SD = .32$.

In the Experimental Group the statistically significant difference between novice and veteran teachers was found on two composite variables, *Humane Education* and *Animals in Science, Education, and Research.*

Post-intervention comparison of group means for *Humane Education* revealed that $t(11) = 2.62$, $p = .024$. The *Humane Education* mean of the veteran group ($M = .61$, $N = 8$) was statically significantly lower than the mean of the novice group ($M = 1.3$, $N = 5$). In the Experimental Group, novice teachers were more positive about Humane Education than veteran teachers.

Post-intervention comparison of group means for the composite variable, *Animals in Science, Education, and Research*, revealed that $t(11) = 3.2$, $p = .009$. The mean score

of the veteran group (M =.13, N = 8) was statically significantly lower than the mean of the novice group (M =1.04, N = 5). In the Experimental Group, novice teachers were more positive than veteran teachers about not using animals for research.

In the Control Group, an independent samples *t*-test showed no statistically significant difference on the pre-intervention *AAS* scores between novice and veteran teachers, $t(10) = 1.02$, $p = .33$. Similarly, there was no statistically significant difference between these two participant groups on the post-intervention *AAS*, $t(9) = 1.89$, $p = .09$.

The mean pre-intervention *AAS* score for the novice teachers in the Control Group was $N = 2$, $M = .73$, $SD = .53$, while the mean score for the experienced teachers was $N = 10$, $M = .37$, $SD = .44$. Post-intervention, the mean score for the novice teachers was $N = 2$, $M = .92$, $SD = .25$, whereas the mean score for the experienced teachers was $N = 9$, $M = .43$, $SD = .34$.

In the Experimental Group, an independent samples *t*-test showed no statistically significant difference between novice and veteran teachers on pre-intervention and post-intervention *AAS*; in the pre-intervention condition, $t(10) = .67$, $p = .52$, and the post-intervention condition, $t(11) = 1.09$, $p = .29$.

The mean *AAS* score for the novice teachers in the Experimental Group pre-intervention was $N = 5$, $M = .73$, $SD = .68$, while the mean score for the experienced teachers was $N = 7$, $M = .45$, $SD = .74$.

Post-intervention, the mean *AAS* score for the novice teachers in the Experimental Group was $N = 5$, $M = .93$, $SD = .61$, whereas the mean score for the experienced teachers was $N = 8$, $M = .47$, $SD = .81$.

Subject area. In addition to the length of teaching experience, the researcher examined differences between the participant groups based on the subject area they

taught. Based on their demographic information, two groups were created—(a) language and (b) other subjects that included science, mathematics, and history. The independent sample *t*-test was conducted to compare means of the two groups.

There were no statistically significant differences pre- and post-intervention on *AAS* between the two groups for either the whole sample or the Control and Experimental Groups.

For the whole sample, pre-intervention *A-CIS* showed no statistically significant difference between the two groups ($t(22) = .99$, $p = .33$). The mean *A-CIS* score of the language teachers group ($M = .56$, $SD = .42$, $N = 11$) was not significantly different from the mean *A-CIS* score of teachers of other subjects ($M = .40$, $SD = .34$, $N = 13$). There were however statistically significant differences pre-intervention on two composite variables, *Animals in Science, Education, and Research* and *Animals in Entertainment*. The independent samples *t*-test for the *Animals in Science, Education, and Research* revealed statistically significant difference between the two groups of subject teachers ($t(22) = 2.07$, $p = .05$). The mean *Animals in Science, Education, and Research* score of language teachers ($M = .42$, $SD = .60$, $N = 11$) was significantly higher than the score of teachers of other subjects ($M = -.03$, $SD = .47$, $N = 13$).

The independent samples *t*-test for the *Animals in Entertainment* revealed statistically significant difference between the two groups of subject teachers ($t(22) = 2.27$, $p = .03$). The mean pre-intervention score on *Animals in Entertainment* of language teachers ($M = .48$, $SD = .91$, $N = 11$) was significantly higher than the score of teachers of other subjects ($M = -.38$, $SD = .94$, $N = 13$).

No statistically significant differences were found on other composite variables for the whole sample.

In the Control Group, there was a statistically significant difference between subject teachers in the pre-intervention *A-CIS* on the composite variable *Animals in Entertainment* ($t(11) = 2.32$, $p = .041$). The mean *A-CIS* score of five language teachers was $M = .85$, $SD = .65$, while the mean *A-CIS* score for eight teachers of other subjects was $M = -.44$, $SD = 1.12$.

In the Control Group there was also statistically significant difference between subject teachers in the post-intervention *A-CIS* on the composite variable *Animals in Entertainment* ($t(11) = 3.19$, $p = .009$). The mean *A-CIS* score of five language teachers ($M = 1$, $SD = .59$) was significantly higher than the mean *A-CIS* score for eight teachers of other subjects ($M = -.66$, $SD = 1.05$). The post-intervention scores of language teachers increased and the scores of other teachers decreased.

There were no statistically significant differences on the pre- nor post-intervention *A-CIS* found in the Experimental Group based on the subject taught by the participants.

Grade level. In addition, the researcher examined the study results based on the grade level that participants taught. Based on the participants' demographic information, two groups were created—(a) Kindergarten to Grade 8 (K-8) and (b) High School and Adult Education (H-A).

There was no statistically significant difference on the pre-intervention *AAS* between participants based on the grade level they taught for the whole sample ($t(21) = .33$, $p = .75$). K-8 teachers' mean score ($N = 13$, $M = .51$, $SD = .53$) was higher, though not significantly, than the mean score of the H-A teachers ($N = 10$, $M = .43$, $SD = .66$).

There was also no statistically significant difference between participants based on the grade level taught for the whole sample on the post-intervention *AAS* ($t(21) = .08$, $p = .93$). K-8 teachers' mean post-intervention *AAS* score ($N = 13$, $M = .58$, $SD = .49$) was

higher, though not significantly, than the mean score of the H-A teachers (N = 10, M =.55, SD =.75).

There were no statistically significant differences between the K-8 and H-A groups of teachers in either the Control or the Experimental group on the *AAS*, pre- and post-intervention.

The independent samples t-test was conducted to compare the group means on the pre-intervention *A-CIS* for the whole sample. There was no statistically significant difference between the K-8 and H-A groups ($t(22) = .43$, $p = .67$). The mean *A-CIS* score of the K-8 teachers (M = .50, SD = .33) was not significantly different from the score of the H-A teachers (M = .44, SD = .44). However there was a statistically significant difference between the two groups on the composite variable *Humane Education* pre-intervention ($t(22) = 2.2$, $p = .04$). The mean score of the K-8 teachers (M = 1.04, SD = .53) was significantly higher than the score of the H-A teachers (M = .39, SD = .93). The teachers who taught in the Kindergarten to grade 8, were more positive toward including Humane Education in their instruction than High School and Adult Education teachers. There was no difference between the two groups on the composite variable *Humane Education* ($t(22) = 1.6$, $p = .13$) post-intervention. The mean score of the K-8 teachers (M = 1.01, SD = .51) was higher, though not significantly, than the score of the H-A teachers (M = .52, SD = .97).

In the Control Group, there was a statistically significant difference between K-8 and H-A teachers in the pre-intervention *A-CIS* on the composite variable *Humane Education* ($t(11) = 2.7$, p =.02). The mean *A-CIS* score for seven K-8 teachers was M = 1.2, SD =.45, while the mean *A-CIS* score for six H-A teachers was M =.02, SD =1.1.

In the Control Group there was not a statistically significant difference between K-8 and H-A teachers in the post-intervention *A-CIS* on the composite variable *Humane Education* ($t(11) = 1.8$, $p = .09$). The mean *A-CIS* score for seven K-8 teachers was $M = 1.2$, $SD = .44$, while the mean *A-CIS* score for six H-A teachers was $M = .3$, $SD = 1.2$.

There were no statistically significant differences found in the Experimental Group based on the grade level taught by participants on any of the composite variables.

Companion animals. An ANOVA test was conducted for the pre- and post-intervention *AAS* and *A-CIS* to determine if the scores were significantly different for participants with companion animals in their childhood and at present time. The four conditions considered in this test are given in Table 4. For example, those who had companion animals as a child (yes-child; YC) but not now (no-present; NP), were placed into a (YC-NP) category.

Table 4.

Conditions Related to Having Companion Animals in Childhood and Presently

		Childhood (C)	Present (P)
Having companion animals	Yes (Y)	YC	YP
	No (N)	NC	NP

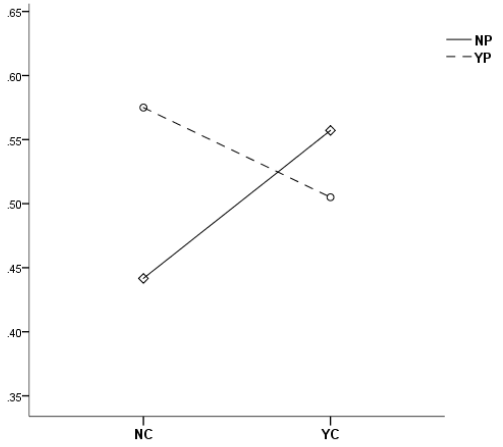
Based on these conditions, participants were categorized into four groups (YC-YP), (YC-NP), (NC-YP) and (NC-NP). The test was performed to see if there was a statistically significant difference between any of the groups. In the whole sample ($N = 26$), there were 8 participants that did not have animals in childhood (NC), compared to 17, who did have them (YC). Thirteen participants did not have animals at the time of

study (NP), compared to 12 who did have animals (YP). Six participants never had animals (NC-NP), two did not have animals in childhood, but had them now (NC-YP), seven had them in childhood, but not presently (YC-NP), and ten had them before and now (YC-YP).

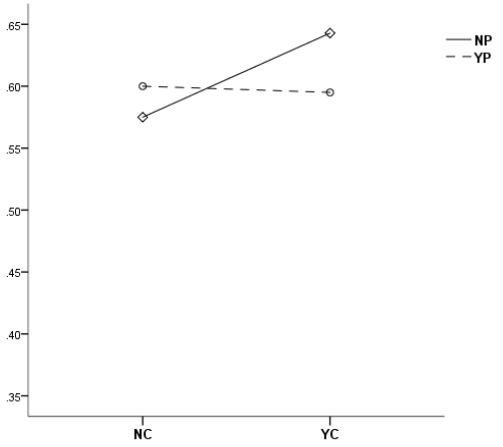
No statistically significant differences were found on either pre- or post-intervention *AAS* and *A-CIS* between the four groups (see Table 5). However, some differences between the scores on the two tests were observed. On *AAS*, there was a notable interaction between the conditions having animals in childhood (YC) and having them now (YP). On *A-CIS* the interaction did not exist, but the participants who presently had animals (YP) scored slightly higher than those that did not (NP). Also, those who had animals in childhood (YC), scored higher than those who did not (NC), especially on the post-intervention *A-CIS*.

Table 5.

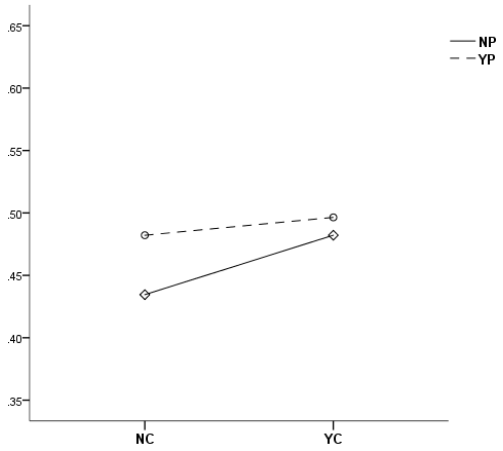
Mean Plots of *AAS* and *A-CIS* Scores Based on Four Companion Animal Conditions



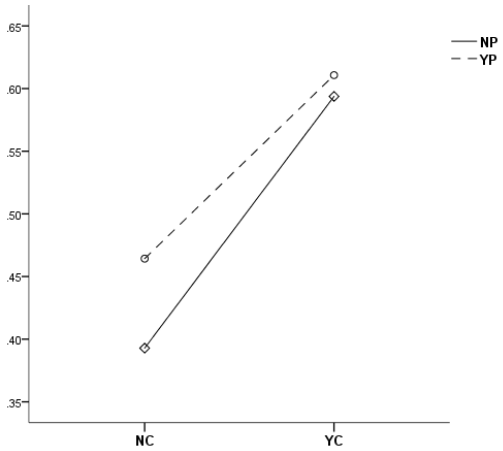
Pre-intervention *AAS*



Post-intervention *AAS*



Pre-intervention *A-CIS*



Post-intervention *A-CIS*

Those participants in the (NC-NP) condition did not significantly differ from those in (NC-YP) condition on any *A-CIS* composite variable. Those in (YC-NP) condition significantly differed from those in (YC-YP) condition on the two pre-intervention composite variables: Using *Animals in Entertainment* ($F(1, 16) = 8.777$, $p = .009$) and *Humane Education* ($F(1, 16) = 4.556$, $p = .049$). Participants in the (YC-NP) condition had significantly lower mean score on the pre-intervention *Using Animals in*

Entertainment composite variable (*N* =8, *M* =-.72, *SD* =1.03), than participants in the (YC-YP) condition (*N* =10, *M* =.58, *SD* =.82). Participants in the (YC-NP) condition had significantly higher mean score on the pre-intervention *Humane Education* construct (*N* =8, *M* =1.18, *SD* =.66), than participants in the (YC-YP) condition (*N* =10, *M* =.36, *SD* = .91). These significant differences were not present after the intervention.

Children. To determine if the scores on the *AAS* and *A-CIS* questionnaire were significantly different across participants with and without children, an independent-samples *t*-test was conducted for the pre-intervention *AAS* and *A-CIS*. The only statistically significant difference was found between participants with and those without children on the post-intervention *AAS*, (*t*(23)= -2.14, *p* =.043). The mean *AAS* score of participants with children (*M* =.70, *SD* =.50, *N* = 21) was significantly higher than of the participants without children (*M* =.06, *SD* =.80, *N* = 4). On the pre-intervention *AAS*, the score of participants with children was higher, though not significantly, than the score of those without children (*t*(23) = -1.05, *p* =.30). The mean score of the participants with children (*M* =.57, *SD* =.56, *N*= 20) was not significantly different than the score of participants without children (*M* =.27, *SD* =.63, *N* = 5).

No statistically significant differences were found between participants with and those without children on the pre-intervention *A-CIS* (*t*(24*)* =.90, *p* =.38). The results of the independent-samples *t*-test indicate that the participants with (*M* =.51, *SD* =.39) and without children (*M* =.34, *SD* =.23) had similar attitude towards teaching about nonhuman animals prior to and post the intervention. The mean scores of pre- and post-intervention *AAS* and *A-CIS* for the participants with and without children are presented in Table 6.

Table 6.

Pre- and Post-intervention *AAS* and *A-CIS* Scores for Participants with and without Children

	Have Children = 1; No Children = 0	*N*	*M*	*SD*
Pre- *AAS*	0	5	.27	.62
	1	20	.57	.56
Post- *AAS*	0	4	.06	.80
	1	21	.71	.50
Pre- *A-CIS*	0	5	.34	.23
	1	21	.51	.39
Post- *A-CIS*	0	5	.26	.42
	1	21	.61	.35

In the Control Group there was no statistically significant difference between participants with and those without children on *AAS, A-CIS*, and on composite variables in either pre- or post-intervention scores.

In the Experimental Group there was no difference for *AAS, A-CIS* and composite variables except one, *Farm Animals*. An independent-samples *t*-test showed statistically significant difference between participants with and without children on the post-intervention *Farm Animals* construct ($t(11) = -2.68$, $p = .021$). The mean score for the participants with children ($M = 1.20$, $SD = 1.03$) was significantly higher than the score of participants without children ($M = -.67$, $SD = 1.15$). Post-intervention, participants with children showed more positive attitude toward farm animals than participants without children.

The mean scores in both Control and Experimental Groups on *AAS* and *A-CIS* for participants with children were higher, though not significantly, than the mean scores of participants without children (see Table 7).

Table 7.

Control and Experimental: Pre- and Post- *AAS* and *A-CIS* Scores for Participants with and without Children

Control or Experimental		Have Children = 1; No Children = 0	*N*	*M*	*SD*
Control	Pre-*AAS*	1	11	.51	.44
		0	2	.17	.46
	Post-*AAS*	1	11	.60	.37
		0	1	.10	N/A
	Pre-*A-CIS*	1	11	.48	.39
		0	2	.41	.23
	Post-*A-CIS*	1	11	.57	.36
		0	2	.21	.40
Experimental	Pre-*AAS*	1	9	.64	.69
		0	3	.33	.81
	Post-*AAS*	1	10	.82	.61
		0	3	.05	.98
	Pre-*A-CIS*	1	10	.54	.41
		0	3	.30	.27
	Post-*A-CIS*	1	10	.66	.36
		0	3	.29	.53

Item analysis for the Control Group revealed no statistically significant differences on pre-intervention *AAS.* The independent-samples *t*-test for the post-intervention *AAS* revealed the following statistically significant differences between participants with and without children on the following items:

- Item 4: “Wild animals, such as mink and raccoons, should not be trapped and their skins made into fur coats” ($t(11)= -2.26$, $p =.045$). The mean score of participants with children ($N =11$, $M =1.55$, $SD =.93$) was significantly higher than the score of those without children ($N =2$, $M =.00$, $SD =0$).
- Item 11: “I sometimes get upset when I see wild animals in cages at zoos” ($t(11)= -3.52$, $p =.005$). The mean score of participants with children ($N =11$, $M =1$, *SD*

=.78) was significantly higher than the score of those without children (*N* =2, *M* =-1, *SD* =0).

- Item 12: "In general, I think that human economic gain is more important than setting aside more land for wildlife" (*t*(11)= -2.60, *p* =.025). The mean score of participants with children (*N* =11, *M* =-1.27, *SD* =.91) showed significantly stronger disagreement with this statement, than of the participants without children (*N* =2, *M* =.50, *SD* =.71).
- Item 13: "Too much fuss is made over the welfare of animals these days when there are many human problems that need to be solved" (*t*(11)= -2.23, *p*=.047). The mean score of participants with children (*N* =11, *M* =-.91, *SD* =.83) showed significantly stronger disagreement with this statement than the score of participants without children (*N*=2, *M*=.50, *SD*=.71).
- Question 17: "It is unethical to breed purebred dogs for pets when millions of dogs are killed in animal shelters each year" (*t*(11)= -2.32, *p* =.041). The mean score of participants with children (*N* =11, *M* =.45, *SD* =.11) was significantly higher than the score of participants without children (*N* =2, *M* =-1.50, *SD* =.71).

The independent-samples *t*-test on the pre-intervention *A-CIS* for the Control Group revealed a statistically significant difference between participants with and without children on Item 7: "In my classroom, I would like to enrich my students' experience with age appropriate content by bringing a live exotic animal to the classroom" (*t*(11) =.26, *p* =.027). For people with children the mean score (*N* =11, *M* =-.64, *SD* =1.12) showed significantly stronger disagreement with this statement than the mean score of people without children (*N* =2, *M* =1.50, *SD* =.71). Differences on other items on the pre- and post-intervention *A-CIS* were not statistically significant.

Item analysis with the independent samples *t*-test for the Experimental Group revealed statistically significant differences on the pre-intervention *AAS* for Item 6: "I think people who object to raising animals for meat are too sentimental" ($t(11) = -2.59$, $p = .025$). For participants with children, the mean score ($N = 9$, $M = -.50$, $SD = .71$) showed significantly stronger disagreement with this statement than the mean score of participants without children ($N = 3$, $M = .67$, $SD = .58$). Differences on other items on pre- and post-intervention *AAS* were not statistically significant.

Item analysis with the independent samples *t*-test for the Experimental Group revealed statistically significant differences on the pre-intervention *A-CIS* for the following items: In my classroom, I would like to enrich my students' experience with age appropriate content by…

- Item 9: "…Using videos showing animals performing tricks" ($t(9) = -2.5$, $p = .03$; equal variances not assumed). For participants with children, the mean score ($N = 10$, $M = .00$, $SD = 1.2$) showed significantly less disagreement with this statement than the mean score of people without children ($N = 3$, $M = 1.00$, $SD = .00$).
- Item 21: "…Dissecting frogs for educational purposes" ($t(9) = -4.88$, $p = .001$; equal variances not assumed). For participants with children, the mean score ($N = 10$, $M = -.50$, $SD = .97$) showed significantly less agreement with this statement than the mean score of participants without children ($N = 3$, $M = 1.00$, $SD = .00$).
- Item 24: "…Collecting insects living near us for a science project" ($t(9) = -2.54$, $p = .032$; equal variances not assumed). For participants with children, the mean score ($N = 10$, $M = .00$, $SD = .25$) showed significantly less agreement with this statement than the mean score of participants without children ($N = 3$, $M = 1.00$, $SD = .00$).

Item analysis with the independent samples *t*-test for the Experimental Group revealed statistically significant differences on the post-intervention *A-CIS* for the following two items, one positively and the other negatively worded:

- Item 4: "In my classroom, I would like to enrich my students' experience with age appropriate content by…Playing videos that show the reality of food production" ($t(11) = -2.68$, $p = .021$). For participants with children, the mean score ($N = 10$, $M = 1.20$, $SD = 1.03$) was significantly higher than the mean score of participants without children ($N = 3$, $M = -.67$, $SD = 1.16$).
- Item 20: "Discussing how hunting helps control deer population" ($t(9) = -2.77$, $p = .022$; equal variances not assumed). For participants with children, the mean score ($N = 10$, $M = -.20$, $SD = 1.40$) showed significantly less agreement with this statement than the mean score of participants without children ($N = 3$, $M = 1.33$, $SD = .58$).

Differences on other items on pre- and post-intervention *A-CIS* in the Experimental Group were not statistically significant.

Religion. To establish if religious membership influenced attitude towards teaching about nonhuman animals, the independent-samples *t*-test was conducted comparing the mean score of participants in the Christian and the Muslim groups on the pre-intervention *A-CIS* for the whole sample. No significant difference was found for the whole sample ($t(19) = .45$, $p = .66$). The mean score for the Christian group ($N = 15$, $M = .48$, $SD = .41$) was not significantly different than the mean score for the Muslim group ($N = 6$, $M = .40$, $SD = .22$).

For the composite variables of the pre-intervention *A-CIS*, there were statistically significant differences found on two constructs, *Animals in Entertainment* and *Wildlife*.

The independent samples *t*-test for *Animals in Entertainment* showed that ($t(19) = 2.35$, $p = .029$). The mean score for the Christian group ($M = .05$, $SD = .89$) was significantly higher than the mean score for the Muslim group ($M = -.92$, $SD = .72$).

The independent samples *t*-test for *Wildlife* was ($t(19) = 2.3$, $p = .03$). The mean score for the Christian group ($M = .47$, $SD = .64$) was significantly higher than the mean score for the Muslim group ($M = -.17$, $SD = .30$).No significant difference between the two religious affiliations was found for the Control Group.

For the Experimental Group, analysis of the pre-intervention scores found statistically significant difference between Christians and Muslims ($t(9) = 2.59$, $p = .029$) on the composite variable *Using Animals in Entertainment*. The mean of the Christian group ($N = 7$, $M = -.14$, $SD = .98$) was statistically significantly higher than the mean of the Muslim group ($N = 3$, $M = -.75$, $SD = 1.08$). While Christian participants' attitudes toward animals in entertainment were close to neutral, Muslim participants' attitudes were more negative.

There were no statistically significant differences found pre-intervention on the *AAS* for the whole sample ($t(18) = 1.20$, $p = .24$). The mean score for the Christian group ($N = 15$, $M = .51$, $SD = .61$) was not significantly different than the mean score for the Muslim group ($N = 5$, $M = .61$, $SD = .52$). A religious membership did not influence attitude towards nonhuman animals. No significant difference between the two religious affiliations was found for the Control Group or the Experimental Group pre- and post-intervention.

Political affiliation. A one-way ANOVA was conducted to compare the attitudes toward animals among participants with different political affiliations. There was no

statistically significant difference found for the whole sample on *AAS* among the three political groups: liberals, conservatives, and people with no political affiliation.

For the Experimental Group, there were no significant differences between any of the political groups on the *AAS*. One-way *ANOVA* showed that the pre-intervention mean scores of participants with different political affiliations were not significantly different ($F(2, 8) = .06$, $p = .94$). Liberal participants had the lowest mean *AAS* score ($M = -.67$, $SD = .66$), followed by Conservatives ($M = .50$, $SD = 1.6$), and those with no political affiliation ($M = .71$, $SD = .21$). The post-intervention means of participants with different political affiliations were not significantly different ($F(2,9) = .47$, $p = .63$). This time, Conservatives had the lowest *AAS* mean score ($M = .23$, $SD = 1.7$), followed by the Liberals ($M = .75$, $SD = .62$), and those with no political affiliation ($M = .88$, $SD = .55$).

In the Control Group a significant difference was found between the three political groups ($F(2,10) = 7.60$, $p = .010$) for the pre-intervention on *AAS. LSD* test was used to determine the nature of the differences between the political affiliations. This analysis revealed that participants who belonged to the conservative party scored significantly lower on *AAS (*$M = .13$*, SD* $= .42$) than participants who were neither conservative nor liberal ($M = .28$, $SD = .30$). The participants who affiliated with the liberal party scored higher than either of the other two groups ($M = .87$, $SD = .19$).

In addition, a significant difference was found among the three political groups ($F(2, 9) = 19.89$, $p < .001$) on the post-intervention *AAS. LSD* test was used to determine the nature of those differences. The analysis revealed that the participants who belonged to the conservative party scored significantly lower on *AAS (*$M = .14$*, SD* $= .05$) than participants who were neither conservative nor liberal ($M = .53$, $SD = .23$). The

participants who affiliated with the liberal party scored higher than either of the other two groups (M =.91, SD =.22).

There were no statistically significant differences found for either the Control or Experimental Group on pre- and post-intervention *A-CIS* taking into the account the political affiliation. There were no differences between participants who affiliated with political groups in their attitudes towards animal-centered instruction.

However, when looking at the composite variables of the *A-CIS*, a statistically significant difference was found between the Control Group participants from three political groups on the three following composite variables: *Using Animals in Science, Education, and Research*, *Using Animals in Entertainment*, and *Wildlife*.

For the first composite variable, *Using Animals in Science, Education, and Research*, a one-way *ANOVA* of the pre-intervention results revealed statistically significantly different results between the three political groups of participants ($F(2,10) = 4.79$, p =.035). Post hoc LSD test was used to determine the nature of these differences. It showed that Liberals scored higher (M =.6, SD =.45) than participants with no affiliation (M =.2, SD =.49). The Conservatives scored the lowest (M =-.3, SD =.35). However, the statistically significant difference existed only between the liberal and the conservative participants. The scores of members affiliated with neither party were not statistically significantly different from those obtained from liberals or from the conservatives.

Post-intervention analysis of *Using Animals in Science, Education, and Research*, using a one-way *ANOVA* also revealed statistically significant differences between the three political groups of participants ($F(2,10) = 5.55$, p =.024). Post hoc LSD test was used to determine the nature of these differences. It showed that participants with liberal affiliation scored higher (M =.72, SD =.33), than participants with no affiliation (M =.15,

SD =.41), while the conservatives scored the lowest (*M* =-.3, *SD* =.62). Again, the statistically significant difference existed only between the liberal and the conservative participants. The scores of members affiliated with neither party were not statistically significantly different from the liberals' or the conservatives' scores.

For the second composite variable, *Using Animals in Entertainment*, a one-way *ANOVA* comparing the pre-intervention results revealed statistically significant difference between the three political groups of participants ($F(2,10) = 6.6$, $p = .015$). Post hoc LSD test was used to determine the nature of these differences. It showed that participants with affiliation to the liberals scored higher (*M* = 1.1, *SD* =.45), than participants with no affiliation (*M* = -.56, *SD* =.96). The conservatives scored the lowest (*M* =-.62, *SD* = 1.01). However, the statistically significant difference existed between the liberal and both the conservative and not-affiliated participants. Members affiliated with neither party were statistically significantly different from the liberals but not from the conservatives.

Post-intervention analysis of *Using Animals in Entertainment*, using a one-way *ANOVA* also revealed statistically significant differences between the three political groups of participants ($F(2,10) = 11.49$, $p = .003$). Post hoc LSD test was used to determine the nature of these differences. It showed that participants with liberal affiliation scored higher (*M* =1.15, *SD*=.52), than participants with no affiliation (*M*=-.38, *SD*=1.11). The conservatives scored the lowest (*M* =-1.12, *SD*=.43). Again, the statistically significant difference existed between the liberals and the conservatives and between liberals and non-affiliated participants. Members affiliated with neither party were statistically significantly different from the liberals but not different from the conservatives.

For the third composite variable, *Wildlife*, a one-way *ANOVA* comparing the pre-intervention results, revealed statistically significant differences between the three political groups of participants ($F(2,10) = 5.8$, $p = .021$). Post hoc LSD test was used to determine the nature of these differences. It showed that the liberals scored higher ($M = .90$, $SD = .55$) than conservatives ($M = .25$, $SD = .35$). The non-affiliated members scored the lowest ($M = -.06$, $SD = .31$). The liberals were statistically significantly different from both the conservatives and non-affiliated members. Participants with no political affiliation were not different from conservatives.

There were not statistically significant differences between political groups on the post-intervention scores for *Wildlife* in the Control Group. A one-way *ANOVA* revealed no statistically significant difference between the three political groups of participants ($F(2,10) = 2.4$, $p = .128$).

There were no differences in the Experimental Group between political parties on any of the composite variables of the *A-CIS*.

All remaining demographic variables, such as diet, type of pet, and causes they support (i.e., environment, social justice, children rights, gender equality, literacy, and animal welfare), were not examined, as there was no noted variation between the participants. Ethnicity and region of birth were also not examined due to a small number of participants in each subgroup.

Qualitative Data

This study also utilized an open-ended section at the end of pre- and post *A-CIS*, as well as an asynchronous online focus group at the end of the study. This approach was driven by the notion that "qualitative methods can provide detailed data about firsthand experiences using insider viewpoints that could be easily missed using predesigned,

structured surveys based on outsider perspectives ” (Rust et al., 2017, p. 1305). Findings from both data collection sources are summarized in the separate sections.

Comments on the questionnaire. In order to gain some further insights into an emic perspective on the participants during the research process, the open-ended comments section was provided with pre- and post-intervention *A-CIS*. Although very brief, the comments call attention to some interesting issues. One issue/theme that emerged relates to the way teachers see relevance of animal-related issues to their content area. One of the participants, as science teacher, in the pre-intervention *A-CIS* asserted, “In terms of what I’d like to bring to the classroom--many of the items are not relevant to my content, so while I may value them and [have] interest in them, it would be difficult to justify their academic relevancy to my subject area.” Another stated:

> Some of my answers do not reflect my personal feelings, but rather my content area. Example – I wouldn’t use frogs for dissection because I teach history, however, I do believe there is an acceptable alternative (electronic) for those who do teach science. This may influence your results.

The last comment relates to the validity of findings, as some of the responses might have reflected relevance of questions to one’s subject area, rather than their attitudes towards animal-related instruction.

A similar issue is signalized by the following remark of a mathematics teacher, “for what I teach many things don’t apply so I had to choose undecided.” One of the respondents stated, “Everything was pretty bias[ed] towards promoting Humane Education.” This is an important issue, as the perception of the experimental intervention as biased could have diminished its effectiveness.

In addition, during the pre-test, some participants attempted to justify their acceptance of the medical research on animals by pointing to the benefits to humans,

making connection to relatives that suffer from various medical conditions, and by identifying jobs that the medical research provides. The same justifications were not present during the post-test. This reflects quantitative results that showed the biggest changes in the respondents' attitude on the composite variable *Animals in Science and Medical Research* for two demographic variables: subject area and political affiliation. The mean score of language teachers was significantly higher than the score of teachers of other subjects. Political affiliation was not mentioned as a factor in the participants' comments.

Asynchronous online focus group. An asynchronous focus group with the study participants was organized online, via their university Blackboard Learning System. Out of 26 invited participants, seven responded. Participation in this part of the research was voluntary. Although participants had the options of responding anonymously, all used their names when posting their comments. All of the seven volunteers were female and liberal, characteristics attributed to most volunteers (Gall, Gall, & Borg, 2007). Out of the seven, five were novice teachers with up to five years of teaching experience. Four represented the adult track, and three were K-12 teachers. The group was diverse in terms of their age. As for participants' religious affiliation, five were Christian and two were Muslim. Six participants belonged to the Experimental Group and one to the Control Group. Some of the participants' comments are congruent with the quantitative data, which indicated that novice teachers were more positive about teaching Humane Education than the more experienced teachers.

As a way of introduction, the researcher posted the message (see Appendix E), asking for feedback about the experience of participating in the study, and in particular, about the material presented.

As suggested by Carey and Asbury (2012), the data in this study were organized for further analysis and interpretation into units of analysis that were examined for emergent themes. This process of inquiry, from the level of specific units to broader concepts, is referred to as inductive analysis (Carey & Asbury, 2012). Berg (2001) suggested that, "the development of inductive categories allows the researcher to link or ground these categories to the data from which they derive" (p. 273).

The inductive analysis was used as an identification technique for selecting themes from the textual data. With the purpose of the study in mind (Krueger & Casey, 2009), the unit of analysis focused on issues around incorporating Humane Education into practice, rather than on individuals or the group.

To ensure reliability and validity of findings two independent coders examined the data. Both coders were experienced humane educators. A decision on emergent themes was made by consensus. A strong inter-rater reliability "suggests that the theme is not just a figment of your imagination and adds to the likelihood that the theme is also valid" (Bernard & Ryan, 2010, p. 72). Multiple readings of text were also done to ensure that codes and themes are well grounded in the data (Carey & Asbury, 2012).

The following five themes emerged:

1. *Desire to incorporate Humane Education into curriculum*;
2. *Obstacles for incorporating Humane Education into curriculum*: uncertainty and inexperience with the topics and strategies of Humane Education, curriculum requirements that leave no space for additional topics; lack of administrative consent; over protectiveness of parents who shelter children from "unpleasant" topics;

3. *Benefits of Humane Education*: opening new venues for teaching; giving new spin to already used strategies; effectiveness of holistic approach; exploration of links among various issues, not an add-on but a new strategy;
4. *Emphasis on teaching Humane Education as early as possible*;
5. *Effectiveness of visuals in humane pedagogy*.

To extend beyond case-specific data, after providing some excerpts from the theme-related postings, thematic analysis was carried towards broader meaning and context.

Theme 1. Desire to incorporate Humane Education into curriculum

> Overall I was quite inspired by the concept of Humane Education and what it could mean for classroom learning. What I found to be the most important aspect of the method is that it seeks to create action in the students and to help them understand that they can affect change. There are so many urgent issues in our world, and I see Humane Education as a mechanism to empower students to take on leadership roles in their local and world communities. I am excited to use Humane Education in my own classroom one day! (Participant 1)

> I definitely can see myself using pieces of your provided lessons. I hope to teach either ELA or ESL, so I think this topic lends itself to writing quite well. I will admit my ignorance on this topic, but I am thankful for the opportunity to learn about it even if it was just an overview. It has sparked my curiosity and has been a catalyst for some very thoughtful conversations between my family and me.

> If one is going to teach something it might as well be something that matters. I found that to be simple, yet profound. (Participant 2)

> I would really like to use all the information that you presented to help with my future career as a TESOL educator. I'm also very interested in pursuing the graduate school program in humane studies ... I feel that both programs will complement each other and help to open more opportunities for me as a future educator. Thank you so very much for opening my heart and mind to humane studies. (Participant 3)

> Honestly, I didn't expect classes with Human Education would give me green light to think deeply of many strategies in teaching ESL adult. (Participant 5)

> I will certainly be incorporating that idea into my overall teaching repertoire. (Participant 7)

As it is evident in the above participants' comments, a desire to incorporate Humane Education into curriculum, and even more precisely, into one's own teaching clearly emerged as a strong theme. The participants provided various thoughtful reasons for their desire to do so. Participant 1 felt *inspired* by Humane Education and *excited* to use it. This speaks to still often neglected, yet fundamental characteristic of all learning, namely, its emotional aspect. While it is in some way acknowledged through numerous studies on motivation, outside of that specific area of interest, the role of emotions in learning is usually given secondary importance after cognitive and socio-cultural considerations. Yet, due to the very purpose of Humane Education to engage students in action, it is appropriate that its emotional aspect figures prominently as a rationale to use it. Directly linked to that purpose is, as Participant 1 noted, the ability *to empower students to take on leadership roles* and *to affect change.* This feature of Humane Education is valuable in the context of a democratic society. While admittedly, our current economic system provides strong incentives against making humane choices in our daily lives—whether they come in the form of money or convenience—and further reinforces them through laws and regulations, some space for dissent is allowed and Humane Education provides socially acceptable strategies to act in that space. Furthermore, the idea that the actions of every individual can make a difference is fully compatible with the North American mainstream discourse.

Participants 2 and 3 pointed to the usefulness of Humane Education for their teaching area, which is TESOL. Participant 2 mentioned the applicability of Humane

Education to teaching writing, while Participant 3 went a step further and suggested that both areas, Humane Education and TESOL complement each other. I believe that the complementarity between those two fields exists at two levels: conceptual and practical.

Conceptually, TESOL as a field aims at empowering non-native speakers of English, be it newcomers, foreign students or professionals seeking advancement, to master the world's dominant language, so they can access jobs and resources available to English speakers. In that sense, ESL teachers promote social mobility, equality, and diversity, which are compatible with Humane Education (for the purpose of this section, I put aside the issue of English language hegemony, whose discussion would take me away from analyzing the data at hand). At the practical level, ESL lesson plans, which focus on such language skills as speaking, listening, reading, and writing, render themselves easily to be vessels for humane content (Domzalski & Gatarek, 2011).

However, TESOL is not the only teaching area to which Humane Education is applicable. As Participant 2 underscored, "*If one is going to teach something it might as well be something that matters*." This makes Humane Education useful across curriculum from language arts, to social studies, to science, as virtually any topic can be presented from a humane perspective (Andrzejewski, Pedersen, & Wicklund, 2009).

Theme 2. Obstacles for incorporating Humane Education into curriculum

> I found the questions on the surveys thought provoking in that they are questions I never really asked myself before. Because I teach elementary school children, a lot of the heavier topics aren't typically approached during their time in the media center with me. Of course the material presented would be adapted to appropriate grade-level content if implemented into the curriculum, but I'm not sure that we, as a staff, would be given the okay to present the information as lessons. That said, I work in a Catholic school and we often discuss "good choices", which could potentially allow for the integration of the subjects from your material.
>
> (Participant 7)

> Some of the topics, even if presented at an age-appropriate level, would cause certain backlash in my particular teaching environment. Parents are so protective of their children that anything causing the slightest discomfort warrants a call to the administration. I think most agree that this overall aversion to "unpleasantness" has become a blanket problem in our society and hindered the growth and maturity of American youth. (Participant 7)

> As a high school teacher, I wondered when/how I would be able to incorporate humane education into a curriculum that is already pulled thin by HSCEs [High School Content Expectations] and CCSS [Common Core State Standards for ELA/Literacy]. (Participant 4)

> In the beginning I was a nervous and wasn't sure what the material will include. After the presentations I felt more comfortable and it made more sense to have these topics introduced in the classroom. (Participant 5)

The theme "Obstacles in incorporating Humane Education into curriculum" was another theme that emerged clearly out of the participants' comments. Four sources of such obstacles were identified: lack of one's own preparation, lack of space in the curriculum, lack of administrative consent, and lack of parental consent. The participants' insights in this area are of great value for formulating practical implications of the study, as any implementation of Humane Education at a larger scale from elementary to high school education necessitates finding remedies for the aforementioned obstacles. Below I offer some comments on the roots of the obstacles, both as suggested by the participants and as I see them in a larger socio-cultural context. I also mention briefly possible remedies that I cover more fully in the subsequent Discussion and Conclusion Chapter.

Lack of one's own preparation hinders teaching any content. It is not enough to know *how* to teach (pedagogical preparation), but one also needs to know *what* to teach (content preparation) to be fully successful in the classroom. As the comment from Participant 5 attests, familiarity with the subject lowers teachers' anxiety and helps them

see where the content may fit in the curriculum. While it is certainly true of any content, I believe it may be especially relevant to relatively novel areas, such as broad-based Humane Education, since most teachers simply have not heard of it and they cannot draw in this regard from their experience as a high school or undergraduate student. The less known the subject/object, the greater anxiety in approaching it. This seems to be universally true whether it comes to teachers and new curricula or young kittens and a new toy. As discussed in the next chapter, the obvious solution to this obstacle is providing pre-service teachers with training in humane or interspecies education (Andrzejewski, Pedersen, & Wicklund, 2009). Admittedly, this remedy may well find many obstacles of its own. Teacher preparation programs are already filled with numerous requirements crucial for developing necessary competencies in candidates and for satisfying accreditation criteria. There seems to be no room for another course. Beyond that, a question needs to be posited whether Humane Education should be presented as yet another subject (content preparation) or as a set of pedagogical strategies to be used across the curriculum.

Just *as a lack of instructional time* may hinder adding Humane Education to teacher preparation curricula, so it may have the same effect on a high school curriculum, as stated by Participant 4, and one may safely assume this would also extend to elementary and middle school curricula. Again, the question should be raised whether Humane Education could be implemented across the curriculum, rather than being treated as a separate subject. It seems that both the all-encompassing nature of Humane Education and existing curricular constraints point to the former option as more fitting the current educational context.

Administrative consent or lack thereof is a governing factor in implementing any novel ideas into curriculum. Such consent should not be taken for granted in the case of Humane Education. This is clearly expressed by Participant 7, who wrote*:* "*but I'm not sure that we, as a staff, would be given the okay to present the information as lessons*."

Administrative decisions are the function of an interplay among many co-existing or competing pressures, such as financial constraints, curricular constraints, accreditation requirements, and drive for high student test scores on standardized tests, legal requirements including special accommodations, student and parent satisfaction, competition from other schools, teacher unions, political climate, and more. With such a complex set of factors impacting the well-being or even the very existence of a school, one should expect a great deal of caution from any administration when it comes to novel approaches, especially if they may be seen as controversial, as it might be the case with Humane Education. One possible solution was suggested by Participant 7 who wrote, "*I work in a Catholic school and we often discuss 'good choices', which could potentially allow for the integration of the subjects from your material*." I find the above suggestion very helpful, as it aims at making the unfamiliar concept of broad-based Humane Education a part of a long-standing mainstream tradition. In my experience, this approach worked well in the process of establishing a graduate program in humane studies at a Catholic Franciscan university. To this end, the existing parallels between the Franciscan teachings and Humane Education regarding social justice, care for Creation/Nature, and animals as brethren and animal protection were explored to show the evident compatibility of the two approaches. Emphasizing conceptual ties of Humane Education with well-established ethical or religious traditions may be an effective way to gain administrative consent for its implementation. In secular institutions, stressing parallels

between Humane Education and character education or citizenship education could be another way of securing administrative approval (Tate, 2011). Khan and Humes (2009) suggest that the critical intersectional literacies of Humane Education could be integrated into environmental educational standards, thus making them more legitimate within the current educational system.

The comment of Participant 7, saying that "*Parents are so protective of their children that anything causing the slightest discomfort warrants a call to the administration*," suggests that persuading administration may be an easier task than persuading parents. As Participant 7 further suggests, this is a problem that affects a larger society. I believe that it comes from the interplay of two cultural tendencies strongly pronounced in the North American societies: eschewing any potentially disturbing information by calling it offensive and overprotecting one's children. The former seems to have its roots in hedonism, seeking constant gratification and pleasure, which is being boosted by ubiquitous consumerism, while the latter may reflect anxieties experienced by so many people caused by the overwhelming, game-changing cultural shifts of late. Such shifts include redefinition of the concept of family, instability of job market, and influx of immigrants. All of them induce fear and discomfort that individuals may attempt to counterbalance by being overprotective parents, thus seemingly shielding their children from any discomfort. The remedies for this obstacle may require social transformations beyond schools that are but mirrors of our society.

Theme 3. Benefits of Humane Education

> I particularly liked the activities that helped connect our daily activities to those of others around the world. Most students (especially young students) do not know how greatly their choices can influence people/animals/environments on the other side of the world. Making this connection can fundamentally change their behavior in a way that they are comfortable with. (Participant 1)

> The book shared in class, *The Power and Promise of Humane Education*, provided some great ideas for incorporating humane education topics in the classroom…. This book provided inspiration and reinforced that I have the foundation to incorporate some of these themes. For example, last year, as I was searching for topics of interest for a creative writing class I was assigned to teach, I came across a portrait series by an artist named Gregg Segal. He photographed individuals, couples, and families in a week's worth of their own garbage. I used the photos as inspiration for students to create background for characters in a short story—who they were, where they lived, what career they held, hobbies, etc. Now that I have been exposed to the concept of humane education, I realize that I can take that assignment in a completely different direction—facilitating discussions, posing questions for research, and pushing students to think about a much bigger picture so they might be inspired to think about the consequences of their actions/inactions. (Participant 2)

> I really enjoyed learning the presented material. The material was very thought-provoking and informative. It was interesting for me to critically think of how to resolve problems in our world in a humane way that is holistic. Often times when problems in our world are addressed it is only addressed humanely from one side of the problem. For example, we will only focus on an environmental problem from the way the problem is affecting animals in a particular area, like save the whales or save the polar bears, or save the endangered species, the problem is not addressed in a way that it incorporates how the problem is affecting humans, or the local landscape. I like how you pushed us to think critically about all aspects of the problems that you presented in a very holistic humane way. (Participant 3)

It is encouraging that in spite of identifying many obstacles to implementing Humane Education, the participants also commented widely on its benefits to students, thus forming the next theme analyzed below. The participants underscored various pedagogical benefits flowing directly from the Humane Education principle of *exploring the interconnectedness among various issues.* This approach offers teachers *new venues for teaching*, as evident in the following comment. Participant 1 wrote: "*I particularly liked the activities that helped connect our daily activities to those of others around the world. Most students (especially young students) do not know how greatly their choices can influence people/animals/environments on the other side of the world*." As teachers are always on the lookout for new ways to engage their students, Humane Education strategies can be a great resource for that purpose. While the Ontario curriculum may

offer space for Humane Education through two frameworks: *Science, Technology, Society, and Environment* education (Karrow, 2018; Pedretti & Nazir, 2011; Steel, 2014), as well as Environmental Education policy, *Acting Today, Shaping Tomorrow* (Karrow & Fazio, 2015; Karrow, 2018), an efficient use of that space posits challenges. To this end, selected infusion of Environmental Education (EE) supported by the latter framework is an Integrated Curriculum Model (ICM) that falls short from an integrative perspective, as it allows for the domination of science and overly Western framework (Karrow & Frazio, 2015). To remedy the above shortcomings, the authors propose, among other steps, "a promotion of an ICM that preserves subject/disciplinary epistemology, i.e., EE's holistic episteme" (p.101) and an inclusion of Indigenous knowledge. Those insights are applicable not only to EE, but also to broad-based Humane Education.

Equally importantly, Humane Education can inspire teachers *to give a new spin to the activities and materials already used for other purposes.* Participant 4 attested to that benefit by speaking about using pictures of families with their weekly garbage to identify their careers and hobbies, "*Now that I have been exposed to the concept of humane education, I realize that I can take that assignment in a completely different direction.*" This can be very advantageous to teachers, as it makes them more confident that they are able to implement Humane Education in their classrooms, as Participant 4 stated, "*The book shared in class, The Power and Promise of Humane Education, provided some great ideas for incorporating humane education topics in the classroom…. This book provided inspiration and reinforced that I have the foundation to incorporate some of these themes.*" The more confident the teachers are with Humane Education, the more likely they will incorporate it into their teaching. This speaks directly to one of the obstacles discussed in the previous section, namely *the lack of one's own preparation*.

The Participant 4 comment above suggests that it might be remedied in some cases even by a brief exposure to the novel approach.

At the same time, teachers appreciate the challenging nature of Humane Education flowing from its *holistic approach*, as expressed by Participant 3: "*I like how you pushed us to think critically about all aspects of the problems that you presented in a very holistic humane way."* I can attest from my own experience that learning about issues holistically and discovering connections among seemingly disparate issues can be intellectually and emotionally invigorating and it can lead to changes resulting in attempting a more humane lifestyle.

Along with the appreciation for new strategies and perspectives, the participants listed many direct learning *benefits for students*, such as developing an awareness of the consequences of their own choices and ultimately changing their behavior. The former was reflected in the comment of Participant 4: "*pushing students to think about a much bigger picture so they might be inspired to think about the consequences of their actions/inactions*," while the latter was expressed by Participant 1 in reference to the interconnectedness among people, animals, and environment: "*Making this connection can fundamentally change their behavior in a way that they are comfortable with*."

Examining the effects of one's choices on others and the environment and making positive changes lie at the heart of Humane Education. The fact that the participants included those elements in their comments attests to the potential Humane Education holds for students and teachers alike.

Theme 4. Emphasis on teaching Humane Education as early as possible

> I often read books about animals in class, which triggers an immediate response from the students. Children love animals and we often talk about the jobs they do, companionship, loss, and their love. However, I rarely present anything about the

> subject of food and/or where we sit on the food chain, child labor, or gender issues. Your presentation has really made me think about the wealth in relaying the concept of making an "informed choice" regarding our daily behaviors, and more importantly, that these choices begin at a very early age." I will certainly be incorporating that idea into my overall teaching repertoire. (Participant 7)

> As an adult ESL teacher, I will have to think deeply on how, what, and when to introduce Humane Education in the class. However, I believe that K-12 teachers need to plan lessons that include humane education because they will be opening student's eyes. I think it is more beneficial for K-12 because they are the future of the nation. (Participant 5)

It would be difficult to overstate the importance of childhood experiences, including schooling, to the subsequent development of an individual and the formation of her/his attitudes and worldviews later in life. Participant 7 wrote directly to that fact in reference to Humane Education, as she discussed "*relaying the concept of making an* '*informed choice*' *regarding our daily behaviors, and more importantly, that these choices begin at a very early age*." To take advantage of the unique power of formative years for the sake of instilling the principles of Humane Education, teachers may want to keep in mind that, "*Children love animals*," as Participant 7 stated. This characteristic provides a natural venue for teaching curiosity, creativity, critical thinking, reverence, respect, and responsibility, all of them being elements of Humane Education. Focusing on implementing Humane Education into curriculum as early as possible may yield abundant and long-lasting benefits. Since in many individuals, the affinity to animals seems to fade rather quickly with age, early exposure may counter that tendency. This might be the reason why the teachers of the younger grades, as the quantitative data shows, were more willing to incorporate Humane Education into their practice. The importance of this qualitatively obtained theme is further reinforced by its correspondence to one of the quantitative results of this study, namely, the positive correlation between growing up

with companion animals and the positive attitudes toward animals and compassion toward animals later in life.

Exposing children to Humane Education early on can be motivated not only by their love for animals and openness to ideas, but also "*because they are the future of the nation*," as Participant 5 wrote. Humane Education can thus be seen as an instrument of character building and citizenship formation. This is a compelling reason in the light of environmental and social challenges awaiting future generations of global citizens.

Theme 5. Effectiveness of visuals in humane pedagogy

> I think the piece that stood out the most for me during your in-class presentation was the image of the children sitting together and weaving. The students I teach are extremely privileged and they would find that photo and information staggering. The presentation with accompanying photos had a strong effect on me in the sense that I can work harder to find reading content sensitive to world topics such as the ones you presented. Picture books are a fantastic way of relaying information to students in a way that is both gentle and easier to receive (i.e., The Librarian from Basra: A True-Story). I think I need to spend more time seeking out books that touch on the many issues you discussed to foster thought and class conversation. As you know, kids have a lot to say. (Participant 7)

Although represented by only one comment, this theme deserves inclusion, as it refers to an important strategy used by many humane educators. While the pedagogical effectiveness of visuals is widely accepted, after all "a picture is worth a thousand words," it becomes controversial when it comes to graphic imagery of violence, be it toward humans or animals. The opponents of such uses claim that such imagery is employed for shock value. The proponents argue that such photos or videos provide a missing referent, as in the case of slaughterhouses, thus informing the public of the realities routinely hidden from its view. The effectiveness of such imagery on attitude change in different audiences certainly warrants a research study whose implications

could be of great help to humane educators. At the metacognitive level, Humane Education teaches how to analyze images from the popular media and recognize the true message behind the image. Scrutinizing advertisements and learning about propaganda devices, as a part of critical media literacy, are all important elements of humane pedagogy.

Summary

This chapter provided an in-depth look at both quantitative and qualitative results of the study. The following quantitative results were analyzed in detail: reliability and convergent validity of *A-CIS*, demographic data, comparison of the Experimental and Control Groups on the *AAS* and *A-CIS* pre-intervention and post-intervention scores, consistency of participants' responses on both scales, item responses on each scale and composite variables on *A-CIS.* Based on the results obtained by pared-samples *t*-tests, neither of the two Null Hypotheses could be refuted, but further detailed analysis of items and composite variables showed some statistically and or educationally significant trends. The qualitative data description was focused on the discussion of the five themes that emerged from the output of the participants of the asynchronous online focus group: *Desire to incorporate humane education into curriculum*; *Obstacles for incorporating humane education into curriculum*; *Benefits of humane education*; *Emphasis on teaching humane education as early as possible*; *Effectiveness of visuals in humane pedagogy*.

CHAPTER V: DISCUSSION OF THE RESULTS

Review of the Purpose

The primary purpose of this investigation was to evaluate effectiveness of the *Common Ingroup Identity Model* (*CIIM*, Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000)-based intervention to Humane Education. In particular, this study investigated whether the central *CIIM* techniques of decategorization and recategorization improve the participants' attitudes toward nonhuman animals. It also tested the degree to which those techniques increase the participants' willingness to include animal-centered humane themes in their classroom instruction.

A mixed-method design was determined to be best suited for this study (Creswell, 2008; Creswell, Klassen, Plano Clark, & Smith, 2011; Gall, Gall, & Borg, 2007). Quantitative and qualitative data were collected separately during the fall semester.

The study included a quantitative measurement of attitude change after a one-time instructional intervention. To further inform this study, a qualitative component consisting of an open-ended comments section, as well as an asynchronous online focus group, was also used. The quantitative part of this study used the quasi-experimental pre-test–post-test design, which included a control group (Creswell, 2008; Gall, Gall, & Borg, 2007). Since this study did not include random selection of participants to groups, the quasi-experimental design was implemented (Creswell, 2008). It aimed to discover the impact of *CIIM*-based instructional strategies on attitudes toward animals and toward using pro-animal instructional strategies in the classroom.

All the participants, from whom the data were analyzed ($N = 26$) were students in a graduate program in the field of *Teaching English to Speakers of Other Languages* at a Midwestern, medium-size, private university in the US. The students were enrolled in one

of the two sections of the course entitled *Second Language Acquisition*. Out of 26 participants, 21 were K-12 in-service teachers. The remaining five participants were adult education-track students, holding at the time of the study various jobs not related to teaching. Seven participants took part in the qualitative component.

Prior to instructional intervention, all participants were given, as a part of the pre-test, two instruments to complete: *Animal Attitude Scale (AAS), developed* by Herzog, Betchart, and Pittman (1991), and *Animal-Centered Instruction Scale (A-CIS)*, designed by the author for the purpose of this study. Following the experimental intervention, the *AAS* and *A-CIS* were administered again to all participants as the post-test. In addition, participants completed a 23-item demographic questionnaire. A detailed description of the instruments can be found in Chapter III of this dissertation.

The quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS version 24). The qualitative data were obtained through comment section of the asynchronous online focus group organized at the end of the course, and analyzed for themes and patterns.

Interpretation of Quantitative Data

The following research hypotheses were examined:

- Research Hypothesis 1: Teaching CIIM-based decategorization and recategorization toward nonhuman animals changes participants' attitudes toward the targeted groups.
- Research Hypothesis 2: Teaching CIIM-based decategorization and recategorization toward nonhuman animals changes the perceived likelihood of participants' including animal-centered humane themes in their instruction.

Based on the results, Research Hypothesis 1 was rejected, as there was no strong evidence that a one-time exposure to the *CIIM*-based intervention toward nonhuman animals significantly changed participants' attitudes toward them.

In addition, the Research Hypothesis 2 was rejected as well, as there was no strong evidence that an exposure to the CIIM-based intervention toward nonhuman animals significantly changed the attitudes of participants' toward including animal-centered humane themes in their instruction.

Although the evidence indicated that the one-time *CIIM*-based intervention did not significantly change attitudes towards animals nor did it change participants' willingness to include animal issues in their instruction, a further look at the applicability of the *CIIM* is warranted as the subsequent analysis of data suggests.

Further exploration of the data included disaggregating them in order to examine if differences existed between participants in regards to each item of *AAS* and *A-CIS* as well as the composite variables of the *A-CIS*.

The seven composite variables of the *A-CIS* included: *Animals in Science, Education, and Research, Animals in Entertainment*, *Wildlife*, *Farm Animals*, *Companion Animals*, *Humane Education Issues* and *Not-Animal Related Issues.* The variables were thematically similar to the six animal protection areas introduced by the Animal and Society Institute: "1) companion animals, 2) animals in agriculture, 3) animals in research, testing, and education, 4) wildlife, 5) captive wildlife, and 6) humane education." (Andrzejewski, Pedersen, & Wicklund, 2009, p. 139).

Animal Attitude Scale

Animal Attitude Scale (*AAS*, Herzog, Betchart, & Pittman, 1991), designed to assess the attitudes towards nonhuman animals, was used to gather data relevant to

Research Hypothesis 1. To test the first research hypothesis, a paired-samples *t*-test was performed for both Control and Experimental Groups. No statistically significant difference was found in any of the groups. In both the Control and the Experimental Group, the difference between the pre- and post-*AAS* scores was small thus suggesting that teaching CIIM-based decategorization and recategorization toward nonhuman animals did not significantly change participants' attitudes toward the targeted groups.

In order to have a closer look at the data, further analysis was conducted on the individual item level for the questionnaire *AAS*.

Item analysis of questionnaire *AAS*. The only statistically significant finding was an increase in the Control Group; there was a statistically significant increase from pre-test (M = -.85, SD = .80) to post-test (M = -.31, SD = .75) on item 16 (i.e., "Continued research with animals will be necessary if we are ever to conquer diseases such as cancer, heart disease, and AIDS"). This is of particular interest as it pertains to the attitudes that are seemingly most resistant to change, that is, use of animals in medical research (Knight et al., 2004). It reflects changes in attitudes on the *A-CIS* and points out to a possible transfer from human-directed empathy, activated by the control treatment focused on social justice issues, to the positive attitudes towards nonhuman animals (Signal & Taylor, 2007).

The remaining 19 items were not statistically significantly different between the pre-intervention and post-intervention. The following 11 items increased post-intervention, although non-significantly: 4, 7, 8, 10, 13, 14, 15, 16, 18, 19, and 20. Again this might suggest a positive transfer from human directed empathy to the positive attitudes towards the treatment of animals (Signal &Taylor, 2007). The above changes in the Control Group warrant further look into the *CIIM*-based intervention and whether it

should focus first on social justice issues and then, as the next stage, move to animal justice issues. In the Experimental Group there was no statistically significant difference on any of the items. However, there were ten items that increased post-intervention, though not significantly: 1, 5, 7, 12, 14, 15, 16, 17, 18, and 19. This trend suggests a need for further investigation of possible effect of *CIIM*-based intervention on the attitudes towards nonhuman animals in a bigger and a more representative sample.

Demographic variables. In order to account for possible influential covariates, all demographic variables were examined in relation to the mean scores on *AAS*.

There was no statistically significant correlation found between participants' age, place of residence when growing up, and religion, and the mean score on the pre-test *AAS*. The results regarding age corroborate the findings by Signal and Taylor (2006). In case of the place of residence, studies have shown a positive correlation between growing up in an urban area and an ecologically oriented worldview (Dunlap et al., 2000). As for the religious affiliation, the results are different than those of the study by Grayson (2012), who found a correlation between traditional religious affiliation (i.e., Catholic, Protestant, Jewish) and higher levels of speciesism, as opposed to those with non-traditional religious affiliations.

No statistically significant differences in attitudes towards nonhuman animals were found between participants based on the length of teaching experience, subject area, and the grade level that participants taught.

However, a statistically significant difference was found on the pre-intervention mean *AAS* scores between the male and female groups. The results indicate that the females had significantly better attitude towards nonhuman animals prior to the intervention. This difference persisted post-intervention. This result is supported by

existing research (Herzog, Betchard, & Pittman, 1991; Herzog, 2007, Phillips & McCulloch, 2005; Signal & Taylor, 2006; Taylor & Signal, 2005). Females have shown to have more positive attitude toward the treatment of animals than males. In their seminal study Herzog, Betchart, and Pittman (1991) examined the relationship among gender, sex role orientation, and attitudes toward the treatment of animals in college students. The authors found positive correlation between being female and the feminine dimension of sex role orientation, and positive attitudes toward animal welfare issues. In the cross-cultural study, Phillips and McCulloch (2005) showed that although there was no difference in sentience attribution to different animal species, female students had more concern for animal suffering, and a greater respect of animal life than males. In addition, women scored significantly lower than men on speciesism scale (Grayson, 2012). In his review of several studies of human-animal interactions, Herzog (2007), found that while women, on average, show higher levels of positive attitudes and behaviors toward animals than men, the between-gender differences depend on the area of interaction with animals, as the gender-effect levels increase from low levels regarding attachment, to medium levels in animal use, and high levels in animal protection. However, Herzog discovered that, in sum, greater variation occurs within-sexes than between-sexes.

The current study also investigated if having companion animals in childhood and at present time had an effect on the attitudes towards nonhuman animals as measured by the *AAS*. No statistically significant differences were found on either pre- or post-intervention *AAS* between the four groups (see Table 4). However, some differences between the scores on the two tests were observed, as there was a notable interaction between the conditions, “having animals in childhood” and “having them now.”

Although some studies (e.g., Signal & Taylor, 2006) did not find that past or present pet ownership had any effect on the *AAS* scores, there are many other studies, which demonstrated that having companion animals as a child and an adult influenced positive attitudes toward animals (see e.g., Paul & Serpell, 1993; Taylor & Signal, 2005). Adult participants in the Taylor and Signal (2005) study, who currently had a companion animal, scored higher on *AAS* than those who did not. Also, in the same study, there was no significant difference in *AAS* scores between those who had companion animals in childhood and those who did not.

Animal-oriented empathy was related to the current ownership of pets and to the ownership of pets during childhood (Paul, 2000). Having pets at home was also related to more positive attitudes to, and better knowledge of, both popular and unpopular animals in children (Prokop & Tunnicliffe, 2010). Conversely, Mueller (2014a) linked pet ownership to positive cognitive and emotional development in youth. In another study with youth participants, she found that their pet ownership helped develop positive relationships with animals in terms of emotional attachment, commitment, and moral orientation toward animals. The results also showed that the kind of species of an animal with whom young people interacted, qualitatively affected the relationships (Mueller, 2014b). The effect of pet ownership on empathy in children, and more precisely, the number and type of species owned, was the focus of the study conducted by Daly and Morton (2006). Their findings showed that both preference for and ownership of both dogs and cats was linked to higher empathy levels, as opposed to those children who preferred or owned either dogs or cats or neither, but not both. In addition, higher levels of empathy were seen in girls and in those children whose attachment to their pets was strong. A follow-up study (Morton, 2009) focused on adults who owned pets as children,

owned pets as adults, with the third group being non-pet owners. The species categories were dogs and cats, dogs only, cats only, or neither. While the findings supported in general the notion that pet ownership plays a positive role in empathetic development, the most striking result were high scores on the *AAS* in adults owning both dogs and cats.

The pet ownership seems to affect attitudes toward a wide spectrum of human-animal interactions. Fidler (2003) reported results partially supporting the hypothesis that positive experiences with one's pets are reflected in positive attitudes toward non-pet animals. Kleiven (2003) focused on the differences in attitudes toward wildlife between pet-owners and those without pets. Pet owners indicated liking wildlife species more than those without pets, although no difference between the groups was noted for rats, insects, and snails. Reportedly, pet owners fed wildlife more often than non-pet-owners. Carlsson (2002) explored yet another aspect of human-animal interactions in terms of the differences between pet owners and non-pet owners, namely, attitudes toward biomedical research. He found that fewer pet owners (39%) agreed with use of animals in biomedical research in comparison to non- pet owners (59%). Since there are many factors that affect human relationship with companion animals and, as the result, human attitudes towards the treatment of nonhuman animals, there is a need to investigate this relationship further.

To determine if the scores on the *AAS* were significantly different across participants with and without children, an independent-samples *t*-test was conducted for the *AAS*. The only statistically significant difference was found between participants with children and those without children on the post-intervention *AAS*. The mean *AAS* score for participants with children was significantly higher than for the participants without children. On the pre-intervention *AAS*, the scores of participants with children were higher, though not significantly, than the scores of those without children. The results,

however, show a trend towards higher *AAS* scores in people with children across the groups. This may be due to the fact that child-related issues such as children's rights and child labour were mentioned in both the experimental and control interventions. Child-related material may have triggered empathy in the participants with children, which in turn was transferred to animals as well. This is consistent with the results of a study by Signal and Taylor (2006), who did not find a significant difference between people with and without children in a current dwelling. Nonetheless their results show a trend towards higher *AAS* scores in people with children.

An analysis was also conducted to compare the attitudes toward animals among participants with different political affiliations. There was no statistically significant difference found for the whole sample on *AAS* among the three political groups: liberals, conservatives, and people with no political affiliation.

For the Experimental Group, there were no significant differences between any of the political groups on the *AAS*. Pre-intervention, Liberal participants had the lowest mean *AAS* score, followed by Conservatives, and those with no political affiliation. The post-intervention means of participants with different political affiliations were not significantly different. Conservatives had the lowest *AAS* mean score, followed by the Liberals, and those with no political affiliation.

In the Control Group, a significant difference was found between the three political groups for the pre-intervention and post-intervention on *AAS*. On the pre-intervention, participants who belonged to the conservative party scored significantly lower than participants who were neither conservative nor liberal. The participants who affiliated with the liberal party scored higher than either of the other two groups. On the post-intervention the participants who affiliated with the conservative party scored

significantly lower on *AAS* than participants who were neither conservative nor liberal. The participants who affiliated with the liberal party scored higher than either of the other two groups. This finding from the Control Group is of interest as it shows an unforeseen effect of an intervention focused on social justice issues, on the attitudes towards nonhuman animals. The question remained as what mechanisms triggered such changes. One may speculate that the intervention in the Control Group triggered a transfer of human-directed empathy to animal-directed empathy, which in turn affected attitude change.

There are studies that show that political affiliation may affect attitudes towards animals. Dunlap and colleagues (2000) for example, reported a positive correlation between Democratic political affiliation and an ecologically oriented worldview, which also included animals. In the study of speciesism, Grayson (2012) found that more liberal political views were associated with lower scores on a speciesism scale and conversely higher levels of speciesism were linked to more conservative views.

As the above analysis of *AAS* indicates, there are several factors that affect attitudes towards the treatment of nonhuman animals. The relationship is not always straightforward and might depend on various demographic and psychological variables. There is a need for more in-depth empirical research in this area in order to better understand that relationship.

Animal-Centered Instruction Scale

The Animal-Centered Instruction Scale (A-CIS) designed by the author for the purpose of this study is a Likert-type self-reporting measure containing 28 items. The *A-CIS* has shown to have good psychometric properties as evidenced by Cronbach's alpha of 0.74, suggesting that items comprising the instrument are internally consistent. After

removing items 4, 10, and 25, Cronbach's alpha improved to 0.79, suggesting that further look into the stronger and more compact *A-CIS* is merited. In addition, the *A-CIS* has displayed a good content validity as evidenced by the agreement on the inclusion and phrasing of items amongst a panel of independent judges. Furthermore, the *A-CIS* has shown strong convergent validity as demonstrated by a positive correlation with the *Animal Attitude Scale* (Herzog, Betchart, & Pittman, 1991).

For the purpose of further analysis, the researcher identified seven composite variables based on their thematic similarity. The following variables were created: *Using Animals in Science, Education, and Research*; Using *Animals in Entertainment; Farm Animals*; *Companion Animals; Wildlife*; *Humane Education;* and *Non-animal Related.* Two independent judges evaluated the seven composite variables to ensure their conceptual similarity.

The seven composite variables were analyzed with the paired-samples *t*-test. There were no statistically significant differences between the pre- and post-test results in the Control Group on any of the composite variables, however there was a slight positive change post intervention on all but two composite variables – *Using Animals in Entertainment* and *Wildlife*, which showed a slight decrease after the intervention.

This might suggest a positive transfer from human-directed empathy, activated by the control treatment focused on social issues, to the positive attitudes towards the treatment of same animals, as shown by Signal and Taylor (2007).

There may be many reasons why human-directed empathy did not transfer to animals in entertainment or to wildlife. Participants in the Control Group may not have been familiar with the abusive and cruel nature of the behind-the-door scene of animal entertainment, so there was nothing to trigger their empathy in this area. As for wildlife,

the very noun, not being in a plural form, suggests the lack of individuality of particular animals in a group and empathy may be most easily directed toward individuals rather than groups.

In the Experimental Group, there were statistically significant increases on two composite variables: *Using Animals in Science, Education, and Research* and *Using Animals in Entertainment*. *Farm Animals* and *Companion Animals* increased after the intervention, though not significantly; *Wildlife* did not change. Both *Humane Education* variable and *Non-animal Related* variable decreased after the intervention.

These findings are of particular interest to the researcher as they show changes in attitudes in seemingly most controversial areas of animal use, such as science, research, and education (Oakley, 2011; Ormandy & Schuppli, 2014; Schuppli, Molento, & Weary, 2015; Williams, Dacre, & Elliott, 2007). This warrants further research to examine what factors are behind those changes.

As initial comments by some participants indicated, people try to justify the use of animals for medical research as necessary. They do not see feasible alternatives as the discourse by the institutions still using animals for research dominates public opinion. Using animals in research is one of the most controversial issues in animal enterprise, yet the most resistant to change. While experiments on animals for the sake of producing safe beauty products have somewhat diminished, as it is less justifiable to the public, medical research on animals is thriving, as its proponents argue that it saves human lives. The Americans for Medical Progress (2015) claim that animal research plays an important role in understanding of diseases and developing effective medical treatments. Some of the US government agencies still test on animals; they include the Environmental

Protection Agency, the Food and Drug Administration, the National Toxicology Program, and the Department of Agriculture (PETA.org, 2015).

The scientists who claim that animal models are inadequate surrogates for predicting how the human body will react to a medication are still in minority (Baily, 2008; Akhtar, 2015). Amongst the pioneers in animal replacement research is the Canadian Centre for Alternatives to Animal Methods (CCAAM) at the University of Windsor with its mission to "develop, validate, and promote methodologies in biomedical research, education, and chemical toxicity testing that do not require the use of animals" (CCAAM, 2017). In the UK, the Animal Free Research group is pledging: "to play a leading role in funding high-calibre, animal replacement research, to communicate this research and to advance and develop widespread support for this endeavour." (n.d).

At present though, for pharmaceutical corporations there exists little incentive to replace animal models with other, ethical means of conducting research, as laboratory animals are cheap, easily accessible, and in the USA, the most common ones—rats and mice—are excluded from the regulations imposed by the Animal Welfare Act.

The composite variable *Using Animals in Science, Education, and Research* is of particular significance to the teacher education since it included items related to the use of animals in education: Items 7 ("Bringing a live exotic animal to the classroom"), 21 ("Dissecting frogs for educational purposes"), 22 ("Using electronic alternatives to dissecting frogs"), 23 ("Collecting photos of insects living near us for a science project"), and 24 ("Collecting insects living near us for a science project"). Although there are many studies that focus on teachers' attitudes toward some controversial practices in the classroom, such as animal dissection (Barr & Herzog, 2000; King, Ross, Stephens, & Rowan, 2004; Oakley, 2011; Oakley, 2013), there are few studies that directly address

Humane Education in teacher preparation (Gorman, 2005; Herzog & Burghardt, 2005; Szecsi, 2014; Tate, 2011). Therefore, more empirical research in this area is needed.

Equally interesting is the statistically significant difference after the intervention found in the Experimental Group on *Using Animals in Entertainment.* Animals are used for entertainment in horse racing, circuses, film industry, marine mammal parks, rodeos, and zoos. Andrzejewski, Pedersen, and Wicklund (2009) consider zoos a product of colonial domination of both cultures and nature, and in this sense akin to racism, as at the peak of colonial times they had on display not only nonhuman animals, but also non-white humans from conquered lands.

One noted exception is The Detroit Zoological Society with its progressive approach to animal welfare (Marx, 2004). Not only does The Detroit Zoological Society acknowledge zoos' early history, but also strive to brake with its colonial legacy by putting animal wellbeing first and educating the public through principles of Humane Education.

Still, any time humans use animals for profit, there is a potential for abuse. Historically, animal welfare has seldom been taken into account and little has changed today. As one explores existing animal protection laws, one sees how inadequate they often seem to be and how little legal protection animals in entertainment enjoy. The noted changes in attitudes of participant are consistent with recent societal changes in regard to circuses and marine parks that receive much publicity in the past few years. These significant findings in regard to *Using Animals in Science, Education, and Research* and *Using Animals in Entertainment* corroborate with a study done by Knight and Barnett (2008) suggesting that attitudes toward animals are not unidimensional and depend on the type of animal use. This view is also supported by Wilkins, McCrae, and McBride

(2015), who report that attribution of emotions to animals is inconsistent and depends on the animals' functional category such as pet, pest, food, or research subject. Similarly, Taylor and Signal (2009) isolated differences in attitudes towards animals depending on their belonging to one of the three categories: pet, pest, or profit/utility animal. Also, Wiley Driscoll (1992), pointed out that attitudes toward animals depended on their particular use (e.g. medical research, product-testing research, use for educational purposes, use for luxury garments, or animals as pests) and the species involved. Hazel, Signal, and Taylor, (2011) investigated the attitudes towards animals among the first-year veterinary students and third-year animal-science students before and after a course on animal ethics and welfare. These authors found that attitudes towards animals depended not only on the category of animal (pet, pest, or profit) but also on the participants' occupational orientation. Significant attitudinal changes after the course were observed in veterinary but not in animal-science students.

Furthermore, of specific interest is the small decrease in *Humane Education* variable in the Experimental Group. The following comment from a participant may explain that result: "Everything was pretty biased towards promoting humane education." This might have created resentment towards humane issues reflected in the negative attitudes towards including those issues in one's instruction. A further look into the experimental procedure that would prevent the impression of partiality is thus recommended.

As studies described in the literature review section suggest (Bastian et al., 2012; Costello & Hodson, 2010), care needs to be taken when looking at similarities between humans and animals. Bastian et al. (2012) demonstrated that exploring similarities between humans and animals impacted speciesist attitudes, but only when comparing

animals to humans. The opposite—comparing humans to animals—did not have the same effect. Furthermore, Costello and Hodson (2010) in their studies on attitudes toward immigrants show that exposure to animal-human similarities increased humanization of immigrants in less prejudiced participants, but not in more prejudiced participants. In addition, in their second study, immigrant humanization increased after exposure to animal-to-human similarities, but not after exposure to human-to-animal similarities or to human-animal gap. This effect was observed in both less and more prejudiced participants. Those findings need to be taken into consideration when designing future *CIIM*-based interventions that address speciesism.

Demographic variables. Exploratory analyses were used to look at inter-correlations between the *A-CIS* and demographic variables. There were several finding of interest to the researcher. Although the *A-CIS* did not correlate with age of the participants or with their gender, findings inconsistent with previous studies on related concepts (Herzog, Betchart, & Pittman, 1991), the years of teaching experience and the grade level participants taught correlated with the composite variable of *Humane Education.* The novice teachers and the teachers that taught the lower of the K-8 grades were more positive towards inclusion of Humane Education in their practice. This is of no surprise, as novice teachers are more receptive to innovative ideas and it is easier to include animal-related issues in curricula for lower grades.

There were also differences between the teachers depending on the subject they taught. The language teachers, by comparison with teachers of other subjects, showed more positive attitude towards inclusion of themes of animals in science and entertainment. Perhaps this shows that it is easier for language teachers to incorporate

some of the most controversial topics into mainstream curriculum than it is for teachers of other subjects.

Although people with children had more positive attitudes towards inclusion of animal-centered instruction than people without children, the difference was not statistically significant. Since the sample was very small a further look at this connection is merited.

Having companion animals in the past or having them now did not influence higher scores on *A-CIS,* however having pets now positively correlated with one composite variable, *Animals in Entertainment*, which means that people having pets are significantly more likely to be against using animals for entertainment than those without pets. Since dogs are one of the two species most commonly kept as pets by participants, the other being cats, it is possible that this particular result was triggered by one of the videos used in the intervention, which depicted wolves as individuals with agency. A transfer of perceived agency from wolves to dogs seems plausible, thus leading to lowering the desire for trick-training dogs, which by definition denies them agency. This connection deserves a follow-up investigation.

While religion did not correlate with *A-CIS,* it influenced participants' scores on two composite variables: *Animals in Entertainment and Wildlife.* Christians had higher scores, thus more positive attitudes towards inclusion of those issues in instruction than Muslims. This relates to the previous research on speciesism (Grayson, 2011). Grayson has shown that religious affiliation correlated with the speciesism scores. In her study the doctrine-oriented groups such Catholics, Jews, and Protestants scored higher on the speciesism scale than did non-traditionally oriented religious and spiritual groups. Although Muslims were not included in her sample they are also doctrine-oriented group.

A further look at a bigger and more diverse sample would help shed some additional light on the role of a particular doctrine in the teachers' willingness to include specific animal related issues in their instruction.

Recommendations for research. As suggested, a stronger, more compact version of the *A-CIS* scale is warranted. It is suggested that a larger sample of participants be selected for the scale validation; DeVellis (2003) recommends 300 participants for the scale development. In order to better assess the inter-correlation with demographic variables, a more diverse sample in terms of ethnicity, religious affiliations, dietary practices, place of residence, and political orientation, among other factors, would be desirable.

It would also be beneficial to assess both convergent and divergent validity of *A-CIS* with other instruments that measure related concepts such as the Speciesism Scale (Grayson, 2011), designed to assess attitudinal and behavioral components of speciesism; Anthropocentrism Scale (Chandler & Dreger, 1993), devised to measure anthropocentric attitudes; Pet, Pest, Profit Scale (Taylor & Signal, 2009), designed to measure attitudes towards animals in different category of usage; and revised New Environmental Paradigm (NEP) Scale (Dunlap et al., 2000), that measures pro-environmental orientation.

In order to assure good content validity, the wording of some items should be re-assessed. Loaded words and phrases such "Engaging students in caring collaboratively for a classroom pet" should be replaced with more neutral expressions, for example with, "Having a pet animal in the classroom."

It is recommended that a factor analysis for the *A-CIS* be performed to determine how many latent variables underlay each item.

It is hoped that improved versions of the *A-CIS* would not only bring attention to inclusion of animal-related issues in teacher preparation, but would also provide a much needed tool for further research in this area.

Practical Implications of the Quantitative Results

Various approaches are posited to have a transformative power on attitude change towards the outgroup members and should be considered along the *CIIM* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000). Most rely on a change of cognitive representations based on exposure and experience that encompasses learning. This remains in unison with the factors increasing empathy, such as familiarity, similarity, learning, and past experience (Preston & de Waal, 2002).

As explained in the literature review section of this dissertation, implicit and explicit learning through story-telling, perspective taking, and service-learning are suggested as powerful venues for transforming students' attitudes toward others. Many of those strategies share the common theme of the individualization of animals. Story telling may be an effective way of depicting animals as complex beings (Fawcett, 2000). This can in turn help see them as individuals. Peskin and Astington (2004) support this claim, by showing how picture storybooks help children build representational understanding of other's state of mind. From there, a short step can lead to perspective-taking, which not only allows students to see an animal as an individual, but moreover, it may lead to empathizing with her.

As discussed in the literature review section, several studies demonstrate that perspective-taking improves attitudes towards others. Research on various aspects of perspective-taking renders a complex picture. Taking the perspective of an outgroup member improves attitudes towards the outgroup and towards specific individuals of that

outgroup as well; but the change does not generalize to other outgroups, according to the results obtained by Shih, Wang, Bucher, and Stotzer (2009). Individual differences in prejudice level were the focus of the study by Vorauer, Martens, and Sasaki (2009). Their results suggest that the effect of perspective-taking on one's behavior is mediated by individual differences in prejudice level, with higher-prejudice-level individuals showing positive effects on their behavior and lower-prejudice-level individuals demonstrating the opposite effects. Linking perspective-taking to cognitive rather than emotional empathy (Daly & Morton, 2008) suggests its limits in generating attitude change. Another important factor mitigating the presented results on perspective-taking is stability of change, a variable not accounted for by the methodologies of the above studies. As some authors suggest (Eagly & Chaiken, 1995), attitude change is seldom stable (Eagly & Chaiken, 1995), and does not always result in subsequent changes of behaviour (Kraus, 1995). The latter is influenced by many factors, as Arbuthnott (2008) suggests. She proposes that effective education in addition to targeting values and attitudes should provide personal action plans that help translate intentions into actions.

Another approach, service learning, defined as "a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities" (see http://www.servicelearning.org/what-service-learning) may also help decategorizing animals, as focusing on animals' individual needs, apart from their species' characteristics and taking their perspective are the prerequisites for any successful service learning project.

While decategorizing animals through the above techniques may be met with relative success, their recategorization may be thwarted by many factors. One such

prevailing factor is seeing animals as a resource, just as seeing humans as resource affects their treatment. After all, this was one of the strongest arguments for slavery in the American South, which contributed to racist attitudes toward African Americans. Our dependence on animal-based food, clothing and medical research, to name just a few obvious areas of animal exploitation, often leads to aversive speciesism, as many of us declare their love for animals while simultaneously using them for food and other ends. While decategorizing one's companion animals may be a common occurrence, recategorizing the species to which they belong seldom follows, let alone recategorizing other species (e.g., Fido is part of my family, but stray dogs should not be allowed to roam and coyotes need to be exterminated). Constant exposure to messages depicting animals as a disposable resource may work against their decategorization as well. Paradoxically, the use of animals by outgroups often serves to categorize them as barbarians (e.g. kosher killings by Jews in the Nazi propaganda, dog eating in Asia by Western standards).

This attitude of commodification of animals is prevalent in the educational setting as well, where animals are used as throwaway teaching resources in science classes or as tools of character building in case of classroom pets (Kahn & Humes, 2009). We do not see those exploitative practices as a form of oppression, thus we do not work toward eradicating them from our institutions of learning. Humane Education can help to eliminate those anthropocentric blind spots in the mainstream educational discourse by identifying them and by providing tangible humane alternatives.

It is of note that public attitudes toward environment changed over the past two decades and can be seen as an ingroup behavior triggered by limitation of resources.

These attitudes often embrace endangered species as well, but through seeing them as resources rather than as planetary companions.

The last phrase can be perceived as connoting the recategorization of nonhuman animals, in which earthlings, both human and nonhuman, constitute one super-category. This brings to fore the importance of language in creating ingroup versus outgroup perceptions. Offensive terms referring to outgroup members, let them be based on race, ethnicity, gender or sexual orientation, are a powerful tool for de-individualizing others and for creating a social distance between the offender and the outgroup. Language use is just as important in de-individualizing animals and in creating a social gap between us and them. Overtly, it may be done through using some species' names as offensive terms (e.g., *he is a pig; she is a bitch; stupid cow),* the latter two being sexist as well. Covertly, it is achieved by referring to the same phenomenon by two different words depending whether the agent/object is human or nonhuman, for example breed versus procreate, litter versus children, cull versus kill, destroy versus execute (Jepson, 2008). The same is true of commonly using the pronoun *it* as opposed to *he* or *she,* when referring to animals. Any language strategies countering the above tendencies would serve to decategorize and recategorize animals. More terms, such as "planetary companions" need to be coined and used. After all, animals cannot speak for themselves, and unlike outgroup humans, they cannot advance their own cause. This remains in the hands of humane educators.

Theoretical Implications of the Quantitative Results

The *CIIM* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000) and the discussed research in social psychology provide a useful paradigm for understanding the data collected in the emergent field of Humane Education. The model's pivotal

concepts of categorization, decategorization, and recategorization provide a much-needed focus for building a coherent theoretical paradigm fitting the needs of Humane Education. Since the model was developed to explain social relations among humans, much conceptual work is required to clearly delineate the advantages and limitations of applying it to speciesism. Subsequently, further *CIIM*-based empirical research exploring Humane Education themes will need to be conducted and evaluated to gauge its utility for the field. Yet so far, its potential in describing and combating various forms of prejudice bids well for Humane Education.

Implications that can be gleaned from the qualitative findings of this study suggest that despite its theoretical strengths, the *CIIM*, as a cognitive strategy, might not be robust enough to address attitude changes. In addition to cognitive aspects, other psychological factors related to attitudes should also be taken into the account. One such factor is empathy, not explored by this study. The distinction between cognitive and emotional empathy and specifically tying emotional concern and personal distress to the latter (Daly & Morton, 2008) may provide helpful guidance as to the selection of attitude-changing techniques. The distinction between cognitive and emotional empathy leads to a complex picture, as Daly and Morton's study on empathy and animal abuse attests: "What our results suggest is that abuse of animals is not necessarily consistent with a lack of empathy; rather, dissociation between cognitive and affective measures of empathy typifies more serious types of abuse (witnessing multiple killings)" (2008, p. 252). This has interesting consequences for conceptualizing the relationship between empathy and attitudes, and subsequently for attitude change techniques. "Education for care is important and, predictably, would lead to an integration of cognitive and affective components of empathy," as Daly and Morton (2008, p. 252) indicate.

Interpretation of Qualitative Data

This section takes a broader view of the contribution of the study's qualitative results to both classroom praxis and future research in Humane Education. Both areas are addressed through interpreting each of the five identified themes in terms of their practical and theoretical implications. Based on the previously presented analysis of the qualitative data in Chapter IV, the following five themes emerged:

1. Desire to incorporate Humane Education into curriculum;
2. Obstacles for incorporating Humane Education into curriculum—uncertainty and inexperience with the topics and strategies of Humane Education, curriculum requirements that leave no space for additional topics; lack of administrative consent; over-protectiveness of parents who shelter children from "unpleasant" topics;
3. Benefits of Humane Education—opening new venues for teaching; giving new spin to already used strategies; effectiveness of holistic approach; exploration of links among various issues, not an add-on but a new strategy;
4. Emphasis on teaching Humane Education as early as possible; and
5. Effectiveness of visuals in humane pedagogy.

Practical Implications of the Qualitative Results

In any educational field, implications of research results for classroom praxis are of paramount importance, as they are *raison d'etre* of such research. Humane Education is no exception and the insights drawn from the five themes that emerged based on the data analysis could be used to improve instruction and to advance the standing of Humane Education in the curriculum.

The first theme, *Desire to incorporate Humane Education into curriculum,* reflects the fact that all effective teachers are always on the lookout for new strategies and topics to engage students and to meet curricular outcomes (Gulamhussein, 2013). This provides a great starting point for any Humane Education initiative, as it can be shown as another tool to meet teachers' instructional needs. Framing it as such, rather than in ethical terms, may be more effective in a K-12 context. Linking it to existing standards for a particular subject matter would strengthen the case for its use.

However, as the second theme*, Obstacles for incorporating Humane Education into curriculum*, suggests, there exist many factors that work against teachers' desire to incorporate humane education into their instruction. Yet, it is possible to offer practical and doable remedies to those obstacles.

Uncertainty and inexperience with the topics and strategies of Humane Education listed as the first obstacle can be countered by including Humane Education in teacher preparation curricula. Tate (2011) calls for including Humane Education into teacher preparation programs, since "Moving forward with preparing children to be civic and social minded in a global community must begin with increased focus on the preparation of education majors in teacher education programs. Integrating Humane Education into courses or programs is one viable option" (p. 313). The principles of Humane Education and its benefits can thus be made part of content of general introductory courses in pedagogy. Humane topics and strategies can be included in methods courses from language arts to social studies to science (Tate, 2011), or as Andrzejewski, Pedersen, and Wicklund (2009) posit,

> Teachers can only teach what they know themselves. Therefore, teacher education programs should foster interspecies education by providing teacher candidates with knowledge and skills about respect, compassion, justice, peace, and non-

> violence toward other animals and species as well as environmental integrity. (p. 150).

This remedy, as obvious as it seems, may be challenging to implement in practice, as it requires a commitment on the part of Faculties of Education to adapt their curricula and model humane attitudes and behaviours. This in turn requires educating faculty as to the benefits of Humane Education and relying on their own desire as effective teachers to include it in their instruction. The above would be best done by humane educators who are also university professors. This will assure that such advocacy efforts are based on existing pedagogical research and are shared through venues acceptable for academics, i.e. peer-review publications, conference presentations, and professional development workshops.

The second obstacle, *curriculum requirements that leave no space for additional topics,* can be addressed effectively by incorporating Humane Education into the curriculum not as a new separate subject, but by using its topics and strategies to enhance a wide range of existing subject matters. Teachers currently have at their disposal many tools that they can use to address existing subject-specific standards and outcomes. Several children's books that reflect humane perspectives may be fittingly used in reading and writing instruction. As they often evoke emotions, they may be superior for that purpose, compared to less engaging reading materials. Science classes when dissection is done virtually or when students decide on a classroom pet based on the animal's needs, provide humane teachable moments well within the constraints of existing science curricula. Social studies with its focus on civic engagement constitute a natural context for student engagement in causes reflecting humane principles.

Incorporating Humane Education across the curriculum not only does not require extra space, but it also has a potential to enhance student learning.

The third obstacle, *lack of administrative consent,* may be countered by a few disparate means. One is framing Humane Education as an enhancement to student learning which, in turn can be seen as a tool to improve student tests scores. It is important to emphasize that topics and strategies proposed remain well within the constraints of the curricular requirements. It is also crucial to show that new tools, such as virtual dissection programs, are financially viable, as they may initially cost more than live animals, but in a few years they actually become less expensive, since there is no more need for purchasing live animals every year (Balcombe, 2000). As it was mentioned earlier, in faith-based schools, tying Humane Education to a religious tradition may be a powerful argument for its inclusion into the curriculum. Pointing out the connection of Humane Education to character education, civic education, and global citizenship education that prepares students to be global, socially responsible citizens may also help in gaining administrative consent (Tate, 2011).

Another idea comes from Kahn and Humes (2009) who assert, "In our opinion, if the critical intersectional literacies of humane education can become better integrated into environmental education standards and frameworks, it will undoubtedly serve to more sufficiently support humane educators…" (p.185). As environmental education strives to be mainstreamed in some jurisdictions e.g. Ontario, Canada (Karrow & Fazio, 2015), using it as a platform inclusive of Humane Education could help advance the latter. Yet, it is important to point out that becoming a mainstream educational item comes with a price, which is usually the critical dimension of an educational field. After all, the mainstream environmental education uses the paradigm of *conservation*, i.e. nature for

human use, and scientism rather than *preservation*, i.e. leaving nature alone without human intervention. The socio-ecological and animal-friendly turn in the environmental education (Kahn & Humes, 2009; Oakley et al., 2010; Spannring, 2017) could remedy that issue by "blurring the boundaries between 'human,' 'animal,' and 'nature'" (Oakley et al., 2010, p. 90).

In any context, a successful implementation of Humane Education requires a champion, a dedicated teacher or an administrator who is willing and able to persistently advocate for that cause. From the perspective of global education, Zhao (2010) argues, "The current education policies and priorities are major obstacles to preparing globally competent students and teachers. Thus, the first element of a comprehensive plan for global education is to advocate policy changes." (p. 428).

The ultimate obstacle, *overprotectiveness of parents who shelter children from "unpleasant" topics,* is undoubtedly most difficult to overcome (Ungar, 2009). There are two strategies that can potentially alleviate parental resistance. One is providing the parents with as much information as possible about the principles, content, and benefits of Humane Education. The other is to always adjust instructional materials and classroom discussions to the student grade level. Controversial topics should be presented in such a way that no participant feels excluded because of his or her views. Even after implementing all of the above steps, there will be parents who will want their children to opt out from particular lessons and they should have this option clearly available to them. It is likely though, that parental resistance will lessen when Humane Education is seen as an integral part of the curriculum rather than a novel add-on, which loops back to the argument for incorporating it across the curriculum. Presenting it as a part of character building and citizenship education would also dissipate parental reservations (Tate,

2011). It might be helpful to remind parents that children can be instruments of change as attested by the example of Craig Kielburger who in 1995, at the age of 12, started a *Free the Children* movement dedicated to combat child labour. Today known as *We Charity*, this movement is involved in various local and global causes. It engages children through *We Schools*, a year-long service-learning program dedicated to making positive change in the community (WE Charity, 2017).

The third theme, *Benefits of Humane Education*, cuts across some other themes, as it is those benefits that prompt teachers to desire to use Humane Education in their classroom and to teach it to very young learners. Its benefits may also serve as the crux on which one can build an argument for implementing Humane Education across the curriculum, whether one aims to persuade teachers, administrators, teacher educators or parents.

As discussed in similar terms in the previous paragraph, *giving a new spin to already used strategies,* is the characteristic that allows incorporating Humane Education to existing curricula as an instructional enhancement rather than a new subject that requires additional space. Since the broad-based Humane Education is by definition an exploration of links among various issues*,* as it bridges social justice, animal protection, and environmental conservation, its strategies are fit to be used in current curricula, which emphasize an interdisciplinary approach and task-based instruction (Andrzejewski, Pedersen, & Wicklund, 2009). This feature of Humane Education reflects effectiveness of a holistic approach*,* making it potentially attractive to educational decision makers.

The fourth theme, *Emphasis on teaching Humane Education as early as possible***,** brings to the fore a well-established argument highlighting the importance of early childhood education for student success and formation in later years. It is indeed the age-

level at which humane topics can be discussed naturally, assuming appropriateness to young student sensitivities, as children tend to be very interested in animals and usually have a positive attitude toward them. It is a precious instructional period that begs for Humane Education interventions, before it closes. Teachers of young learners have at their disposal a plethora of books with animal stories that reflect humane perspectives. As children embark on their journey to become life-long readers, such books can serve as handy tools to address outcomes required by emergent literacy curricula.

The final theme, *Effectiveness of visuals in Humane Pedagogy***,** brings about a polarized discussion about the effectiveness of images in Humane Education in general and the effectiveness of disturbing images in particular. Kalof, Zammit-Lucia, Bell, and Granter (2016), conducted a study that used a slide show to activate students' emotional responses to animals and promote feelings of kinship with them. Their findings suggest that seeing the images of animals improved feelings of kinship with animals and are of importance as they can be explained through the framework of the *CIIM* (Gaertner, Dovidio, & Bachman, 1996; Gaertner & Dovidio, 2000).

While some anecdotal observations of humane educators as to the effect the images have on their audiences run a whole gamut, more research in this area is needed. Thus, it is addressed in the next section.

Overall, the qualitative data of this study provide a rich repository of information from which various practical conclusions can be drawn about the benefits of Humane Education and the challenges in implementing it. The identified themes constitute a helpful platform for discussions about the strategies that can be employed to advance the standing of Humane Education in K-12 curricula.

Theoretical Implications of the Qualitative Results

Intellectual inquiry is interwoven into a complex historical and social tapestry that reflects past and present efforts of individuals and societies. Our research questions are tailored to address the existing gaps in the edifice of knowledge built by our predecessors and the results we obtain serve as a stimulus for further inquiry, not the answers meant to conclude our quest. While they may provide some insights applicable to praxis, as presented in the previous section, they also generate more questions and show the need for further research, at the same time suggesting the directions that it should pursue. The five themes identified in this study serve that purpose well, particularly since the study was exploratory in nature, as it applied the *CIIM*-based interventions originally developed for decategorization and recategorization of human groups to nonhuman animals. In addition, this section discusses directly the links between quantitative and qualitative findings.

The first theme, *Desire to incorporate Humane Education into curriculum*, connects directly with Research Hypothesis 2, which tested the impact of *CIIM*-based intervention on perceived likelihood of participants' including animal-centered humane themes in their instruction. Although the study did not render significant results, the emergence of the first theme provides strong support for pursuing a wide range of questions that would aim at gauging which individual variables correlate with the above desire and in which direction. *The Animal-Centered Instruction Scale (A-CIS)* could be used along with *the Demographic Questionnaire* and other tools, to identify the individual variables with either strong positive or negative correlation with the desire to incorporate Humane Education into curriculum. The quantitative results show that novice teachers as well as language teachers demonstrated more positive attitudes

towards including animal-related issues in their instruction. The next step could be interviewing the participant groups demonstrating such strong correlations for further qualitative investigation. Other questionnaires could be used to explore correlations between the desire to incorporate Humane Education into curriculum and individual variables other than demographics, such as personality types, empathy levels, learning styles or teaching styles. The inquiries delineated above could have some practical implications, but primarily they would serve to enrich the repository of theoretical knowledge in Humane Education.

The second theme, *Obstacles for incorporating Humane Education into curriculum* may constitute a single most poignant qualitative explanation behind the non-significant results obtained for Hypothesis 2, as those several participants who perceived such obstacles may have been less willing to incorporate animal-based themes in their instruction. In addition, the finding suggesting that novice teachers were more open to incorporating animal-related themes in their teaching may be intuitively explained either through a greater zeal for change in novice practitioners in any field and/or the lack of experience with obstacles inherent to the systems, within which they function (Maskit, 2011). As the above claims would need to be verified, it is evident that the second theme provides a plethora of research ideas with tangible practical implications. Investigating the effectiveness of any of the remedies to the obstacles described in the section on the practical implications of the qualitative results could prove to be of immediate use to champions of Humane Education in K-12 schools. As the participants expressed *uncertainty and inexperience with the topics and strategies of Humane Education,* as one of the obstacles, the impact of various types of training on their confidence in Humane

Education expertise could be investigated. This could be also tied to their desire to incorporate Humane Education into curriculum.

The remedies to the lack of administrative consent suggest a particularly promising research area. Another obstacle, *curriculum requirements that leave no space for additional topics,* seems to be closely related to the former and could be treated for research purposes as its subset. Identifying which factors school administrators would consider most in making decisions about adopting Humane Education, could be of great practical value to its advocates. One could examine the weights school administrators assign to improved student learning, student satisfaction, parent satisfaction, compatibility with the standards and required curriculum, congruence with the mission, and associated costs, among others. The results of such studies could guide those who are tasked with persuading school administrators about the value of Humane Education.

The last listed obstacle, *overprotectiveness of parents,* may give an impetus to two disparate lines of research. One could explore the fears that underlie parental overprotectiveness; the other could focus on examining best ways to alleviate those fears when it comes to Humane Education. Qualitative studies using in-depth interviews may be a useful way to investigate the former. The latter could be examined by providing a particular intervention, such as an informative session on Humane Education to parents, and gauging their willingness to allow their children's participation with a pre- and post-intervention questionnaires.

The remaining three themes: *Benefits of Humane Education, Emphasis on teaching Humane Education as early as possible*, and *Effectiveness of visuals in humane pedagogy*, presuppose positive attitudes toward animals and willingness to incorporate animal-centered themes, which correspond to Hypothesis 1 and Hypothesis 2,

respectively. However, both Hypotheses rendered statistically insignificant results, as they gauged changes in those areas induced by the *CIIM*-based intervention. Yet, the emergence of the three themes suggest a more complex picture. It might be postulated that initial levels of both (a) positive attitudes toward animals and (b) willingness to incorporate animal-centered themes, were high enough not to allow for significant attitude changes, similar to the findings obtained by Vorauer, Martens, Sasaki and Simpson (2009), discussed earlier in this Chapter. In addition, each of the remaining themes may be a starting point for subsequent research studies, as described below.

The third theme, *Benefits of Humane Education,* represents the topic that has been well-researched, as the literature review for this study shows (see e.g., Ascione, 1992; Arbour, Signal & Taylor, 2009; Beirne & Alagappan, 2007; Faver, 2010; Fitzgerald, 1981; Nicoll, Trifone, & Samuels, 2008; Sorge, 2009; Szecsi, 2014; Thompson & Gullone, 2003). One element of that theme, *exploration of links among various issues*, seems to suggest a particularly rich investigative area, if not a virgin territory, as most existing studies focus on a singular aspect of Humane Education rather than on the links among animal protection, environmental conservation, and social justice. This state of affairs reflects conceptual and methodological challenges of examining links between seemingly disparate areas of investigation, but it also holds much promise for theoretical and practical developments in the field of Humane Education.

The fourth theme, *Emphasis on teaching Humane Education as early as possible,* calls for longitudinal studies on the impact of early childhood Humane Education on attitudes toward animals later in life. The effect of individual variables, both demographic and personality factors would need to be examined as well to paint a comprehensive picture of benefits and limitations of such education. Since longitudinal studies require

considerable resources, a viability of conducting such a study would likely depend on obtaining a grant for that purpose.

The final theme, *Effectiveness of visuals in humane pedagogy*, is of immediate interest to me as an instructor, as I use videos with graphic imagery from factory farms and other animal enterprises in human-animal studies courses at the university level. While there seems to be a consensus among educators that employing imagery is effective (Kalof, Zammit-Lucia, Bell, & Granter, 2016), the consensus breaks down when it comes to graphic images. There is a definite need to research this issue further through both quantitative and qualitative methods. A preliminary challenge would be to establish what constitutes "effectiveness." Is effectiveness seen in an ability to recall the material, temporary or permanent attitude change, or in making alternative life-style decisions? While gauging the effectiveness of visuals in Humane Education may be a high order, it would come with the benefits immediately applicable to classroom instruction.

As the content of this section demonstrates, the qualitative results of the current study provide a rich basis for varied research questions that may lead us to a better understanding of how to teach Humane Education and how to advocate for its advancement.

Limitations

There are several limitations to the study that should be considered. Firstly, the participants in the study represented a fairly homogeneous group in terms of social class and educational levels. Although teachers were specifically targeted, the results cannot be easily generalized to another population. There are also limitations due to a small sample size; a bigger and more diverse sample is thus recommended.

There may also be some limitations in respect to the instruments used in the research, specifically the *A-CIS*. Since this was the first time this instrument was used, it requires further study with a bigger sample in order to assess its validity and reliability.

In addition, there are also limitations to the procedure, which consisted of one-time 90-minutes intervention. There is a need to repeat the study with a longer intervention over a period of time in order to fully tackle attitudinal changes. For example, Houlette et al. (2004), who conducted a study that tested the principles of the *Common Ingroup Identity Model* (*CIIM)* with children, visited each class for 40 minute-sessions, four times a week, for a period of four weeks. A longer study would also help to assess longitudinal changes in attitudes toward including animal issues in one's instruction.

Furthermore, results of an experimental design in the less controlled and context-sensitive settings should be taken with caution. Data would have been richer if the intervention was observed, recorded, and analyzed for possible confounding variables.

In respect to the experimental procedure, adding another group with no intervention would provide a better base for comparison. In a current design there were two groups, one addressing animal issues, the other focusing on social justice issues. It is possible that there was a transfer effect in the control group that made participants instructed in social issues more sensitive to the animal issues as well. Priming of the pre-test on the *Animal Attitude Scale* and the *Animal-Centered Instruction Scale* could possibly have increased this effect.

Conclusions

The overarching goal of the study was to examine whether the *CIIM* model can be applied to Humane Education, namely whether decategorization and subsequent

recategorization can lead to advances in perceiving nonhuman animals as ingroup members, just as the model yields positive results in this area regarding human groups.

Although neither research hypothesis was confirmed, it does not mean that the *CIIM* model is inadequate for the above goal. The results may be due to the study's limitations, namely, the weakness of intervention (one-time intervention may be not be robust enough) and small samples. There is a need to repeat the study with a longer intervention and larger samples.

However, educational significance of the study is reflected in the qualitative results. The *CIIM* model led to post-intervention discussions and reflections that may have brought about a greater awareness of issues related to treating nonhuman animals as an outgroup and ultimately changing participants' perceptions in this regard. This could, in turn, translate into strengthening their already existing willingness to include animal-related topics from humane perspective in their instruction and become motivated to negotiate multiple obstacles preventing such inclusion. A longitudinal study following up the participants' inclusion of the above topic or lack thereof could show the applicability of the *CIIM* to Humane Education.

A *CIIM*-based activity in a teacher preparation program may become the seed from which the tree of knowledge about the interconnectedness and similarities among all animal species, including humans, can grow yielding for years to come the fruit of modeling.

Summary

The final chapter provided in-depth interpretations of both quantitative and qualitative results. While neither of the two Null Hypotheses could be refuted, the chapter draws tentative research and classroom implications based on a further analysis of items,

composite variables, and demographic data. An interpretation of quantitative data warrants the following research recommendations: use of a stronger version of *A-CIS*, and an increase of a size of participant sample. Practical implications drawn from the study include story-telling, perspective-taking, and service-learning involving animals, as strategies helpful in decategorization and recategorization processes. The applicability of both processes to Humane Education constitute the main theoretical implication of the study, however with a caveat that the model may lack robustness. An interpretation of qualitative data, based on the five identified themes, pointed to the following main practical implication: teachers are willing to teach Humane Education, but are hindered by several obstacles. Those obstacles can be removed through adequate teacher training as well as educating both administrators and parents as to the content and benefits of Humane Education. The theoretical implications drawn from an interpretation of qualitative data call for a quantitative exploration of the five themes. The chapter ended with discussing the limitations of the study and with a conclusion.

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APPENDICES

Appendix A: Hal Herzog's Animal Attitude Scale

Listed below are 20 statements regarding the animals. Circle the letters that include the extent to which you agree or disagree with the statements.

SA= Strongly Agree
A= Agree
U= Undecided
D= Disagree
SD=Strongly Disagree

1. It is morally wrong to hunt wild animals for sport.
2. I do not think that there is anything wrong with using animals in medical research.
3. There should be extremely stiff penalties including jail sentences for people who participate in cock fighting.
4. Wild animals, such as mink and raccoons, should not be trapped and their skins made into fur coats.
5. There is nothing morally wrong with hunting wild animals for food.
6. I think people who object to raising animals for meat are too sentimental.
7. Much of the scientific research done with animals is unnecessary and cruel.
8. I think it is perfectly acceptable for cattle and hogs to be SA raised for human consumption.
9. Basically, humans have the right to use animals as we see fit. SA
10. The slaughter of whales and dolphins should be immediately SA stopped even if it means some people will be put out of work.
11. I sometimes get upset when I see wild animals in cages at zoos.
12. In general, I think that human economic gain is more important than setting aside more land for wildlife.
13. Too much fuss is made over the welfare of animals these days when there are many human problems that need to be solved
14. Breeding animals for their skins is a legitimate use of animals.
15. Some aspects of biology can only be learned through dissecting preserved animals such as cats.
16. Continued research with animals will be necessary if we are ever to conquer diseases such as cancer, heart disease, and AIDS.
17. It is unethical to breed purebred dogs for pets when millions of dogs are killed in animal shelters each year.
18. The production of inexpensive meat, eggs, and dairy products justifies maintaining animals under crowded conditions.
19. The use of animals such as rabbits for testing the safety of cosmetics and household products is unnecessary and should be stopped.
20. The use of animals in rodeos and circuses is cruel.

Appendix B: Animal-Centered Instruction Scale

Listed below are 14 statements regarding classroom instruction. Circle the letters that include the extent to which you agree or disagree with the statements.
SA= Strongly Agree
A= Agree
U= Undecided
D= Disagree
SD=Strongly Disagree
In my classroom, I plan to enrich my students' experience by:

1. Using stories that teach respect to animals.
2. Discussing the differences between animals and us. **
3. Using role-playing to show how animals may feel.
4. Playing videos that show the reality of food production.
5. Encouraging students to talk about their pets.
6. Discussing the educational value of sea worlds. **
7. Bringing a live exotic animal to the classroom. **
8. Inviting students to bring to class traditional dishes from various cultures. ***
9. Using videos showing animals performing tricks. **
10. Organizing trips to a humane society.
11. Inviting speakers to talk about current political issues. ***
12. Discussing pros and cons of globalization. ***
13. Introducing students to environmental organizations. ***
14. Using reading materials on social justice issues. ***
15. Organizing trips to a circus that uses animals. **
16. Engaging students in service learning at a local animal shelter.
17. Engaging students in service learning projects making backyards more inviting to wildlife.
18. Teaching how to control populations of such pest species as raccoons, possums, and squirrels. **
19. Discussing materials that show how hunting together helps develop a bond between parents and children. **
20. Discussing how hunting helps control deer population. **
21. Dissecting frogs for educational purposes. **
22. Using electronic alternatives to dissecting frogs.
23. Collecting photos of insects living near us for a science project.
24. Collecting insects living near us for a science project. **
25. Engaging students in caring collaboratively for a classroom pet.
26. Engaging students in building collaboratively a bat house.
27. Teaching about animals across the curriculum.
28. Introducing students to online petitions advocating animal causes.

** reverse-worded item
*** control items (not related to animal issues)

Appendix C: Demographic Questionnaire

Before you start, please write here your code number_____

This questionnaire is anonymous. Your demographic information is important to this study, however you may choose not to answer any questions that you are not comfortable with. It takes approximately 10 minutes to answer all the demographic questions below.

1) What is your age? _____

2) What is your gender? (Please circle one)
   A. Female
   B. Male

3) What is your ethnic and racial background?
   A. African-American, Black
   B. Chinese
   C. Filipino
   D. Indian
   E. Japanese
   F. Korean
   G. Southeast Asian
   H. White Caucasian – Non Hispanic
   I. Hispanic or Latino
   J. Mexican
   K. American Indian, Alaskan Native
   L. Middle Eastern
   M. More than one race
   N. Unknown
   O. Other (please specify) _____
   P. Prefer not to answer

4) Where were you born (region, country)?
   _____

5) In which type of area did you grow up?
   A. Urban
   B. Rural
   C. Other (please specify)_____

6) In terms of education and income, would you say you are:
   A. Upper class
   B. Upper-middle class
   C. Middle class
   D. Lower-middle class
   E. Working class
   F. Prefer not to answer

7) What is your current occupation?
   A. Teacher
   B. Other (please specify) _____

8) If you are a teacher, how many years of teaching experience do you have?

   _____

9) Also, if you are a teacher, which grade level do you teach?
   1. Kindergarten
   2. Elementary
   3. Middle or Junior High school
   4. High School
   5. Postsecondary
   6. Adult
   7. Other (please specify) _____

10) If you are a teacher, what subjects do you teach?

   _____

11) Do you have children?
   A. Yes
   B. No
   C. Prefer not to answer

12) If yes, how many are:
   A. Less than 5 years old?
   B. 5 through 12 years old?
   C. 13 through 17 years old?

13) Did you have companion animals in your childhood?
   A. Yes
   B. No

14) If so, were they?
   A. Dog
   B. Cat
   C. Fish
   D. Rodent
   E. Reptile
   F. Amphibian
   G. Bird
   H. Insect
   I. Other, please specify:

15) Do you currently have companion animals in your household?
    A. Yes
    B. No

16) If so, are they:
    A. Dog
    B. Cat
    C. Fish
    D. Rodent
    E. Reptile
    F. Amphibian
    G. Bird
    H. Insect
    I. Other, please specify:

17) Does your diet include any of the following?
    A. Meat
    B. Fish
    C. Eggs
    D. Dairy

18) Do you consider yourself to be one of the following?
    A. Non-vegetarian
    B. Semi-vegetarian (avoid meat, poultry, and fish most of the time)
    C. Pesco-vegetarian (avoid meat and poultry but eat fish)
    D. Lacto-ovo-vegetarian (avoid all meat, fish, and poultry but do eat milk, cheese, yogurt, other dairy products and eggs)
    E. Vegan (avoid all animal products)

19) Do you consider yourself to be a religious/spiritual person?
    A. Yes
    B. No
    C. Prefer not to answer

20) Which of the following describes best your religious affiliation?
    A. Nonreligious Secular
    B. Agnostic Atheist
    C. Christianity
    D. Judaism
    E. Islam
    F. Buddhism
    G. Hinduism
    H. Sikhism
    I. Unitarian-Universalism
    J. Wiccan Pagan Druid
    K. Spiritualism

L. Native American
M. Baha'i
N. Not Listed
O. N/A

21) Which of the following best describes your political orientation (please circle one)?
   A. Very liberal
   B. Somewhat liberal
   C. Slightly liberal
   D. Neither liberal nor conservative
   E. Slightly conservative
   F. Somewhat conservative
   G. Very conservative

22) Which causes are important to you? (choose all that apply):
   A. Environment
   B. Social Justice
   C. Children Rights
   D. Gender Equality
   E. Literacy
   F. Animal Welfare
   G. Other (please specify)_____

23) Do you donate time, money or other efforts to the following causes (choose all that apply):
   A. Environment
   B. Social Justice
   C. Children Rights
   D. Gender Equality
   E. Literacy
   F. Animal Welfare
   G. Other (please specify)_____

Appendix D: Letter of Consent

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Animals Are Us: Applying the Common Ingroup Identity Model to Humane Education

You are asked to participate in a research study conducted by Boguslawa Gatarek and Dr. Dragana Martinovic, Ph.D. Supervisor, from the Faculty of Education at the University of Windsor. The results will be contributed to the Ph.D. dissertation at the University of Windsor.

If you have any questions or concerns about the research, please feel to contact

Center for Research, [redacted]

or

Research Ethics Coordinator,
University of Windsor,
Windsor, Ontario N9B 3P4;
Phone: 519-253-3000, ext. 3948; email: ethics@uwindsor.ca

PURPOSE OF THE STUDY

The purpose or this study is to investigate the applicability of the effectiveness of instructional strategies based on the cognitive psychology theory of Common Ingroup Identity Model to humane education. Humane education encompasses social justice and environmental consideration, including animal welfare. The study will investigate usefulness of humane themes in curriculum.

PROCEDURES

If you volunteer to participate in this study, you will be asked to: complete a short questionnaire and respond twice to two surveys. You will also participate in a 90-minut lesson that include short lecture, watching of videos and class discussion.
All parts of the study, with the exception of the online chat, will take place during assigned class time. The study activities will take place during **the five weeks of classes** and will include surveys, lecture, watching of video clips and class discussion.

Week 1: Consent process (45 minutes)

Week 2: Completion of a short demographic **questionnaire** and response to two **surveys** (45 minutes)
Week 3: A **Lesson** that include short lecture, watching of videos, and class discussion (90 minutes)
Week 4: Response two **surveys** (45 minutes)
Week 5: Anonymous **online chat** for selected volunteers (90 minutes)

Online Chat will take place at the end of the study. The detailed instructions will be provided to those who will volunteer to participate in the chat.

You will submit your consent form (signed or unsigned) anonymously in a sealed envelope, which I will only open after all project activities are completed. You will keep a second copy of the consent form to keep for your records.

All students regardless of whether they volunteer to participate in the study will participate in all activities related to this research, with the exception of online chat. By giving consent to participate in this study, you agree to allow me to use your data from two surveys and the online chat.

All survey questions will be typed as a word document, printed on paper, and given to you by using a coded identification. All surveys, distinguishable by each student code, rather than name, will be collected in an envelope and stored in a locked file drawer in the researchers' personal office.

POTENTIAL RISKS AND DISCOMFORTS

Potential risks include feeling of obligation to participate in the study. Every effort will be made to minimize that feeling. You can be assured that they may withdraw from the study at any time without giving a reason. Please remember, that even if you agree to participate you always have an option of withdrawing at the later time by indicating your choice on the survey.

In addition, the survey questions and the intervention may cause some level of discomfort in some participants, due to the fact that they may suggest the worldview contrary to that of the participant. I would like to emphasize that there are no right or wrong answers or preferred point of view. All your contributions are of great importance to the better understanding of teachers' instructional choices.

Other risks may include loss of privacy. Every effort will be made to keep the collected individual data confidential so that privacy is ensured.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

The potential benefits include experience with the humane education topics, materials, and strategies. They might be easily applied across curricula, with different age groups, thus benefiting teachers, students, and community.

COMPENSATION FOR PARTICIPATION

No monetary compensation will be provided, but all students will be provided access to humane education resources.

CONFIDENTIALITY

Any personal information that is obtained in this study will remain confidential and will not be disclosed. The researcher will assign each participant a code, and all other identifying information (including names, locations, etc.) will be removed from the study. The data will be kept in a secure location in a password-protected file and printed data in a locked file cabinet in a secure office. The researcher will be the only one with direct access to the data. Dr. Dragana Martinovic, Ph.D. Supervisor at the University of Windsor, may be given access to the data for analysis. The raw data will be retained until December 31, 2016, following the defence. After that it will then be destroyed. Any confidentially obtained paper will be shredded and the researcher will erase any electronic data. The study may include quotations from participants; however, all identifying information will be removed. As the participant, you have the right to ask the researcher investigator about your personal data being collected for the study and about the purpose of this data. You also have the right to ask the investigator to see your personal information and to make any necessary corrections to it. Upon the completion of the study a copy the final report will be posted on the REB website for the University of Windsor, and there is potential for its presentation at professional conferences and publication in peer-reviewed journals.

PARTICIPATION AND WITHDRAWAL

Your participation in this study is voluntary, and is not part of the requirements for the course. You may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time and for any reason without providing explanation. Be assured that your personal data will be removed and destroyed. You are not required to answer any question(s) that you do not wish to answer. Your decision to withdraw or not to participate in this study will not result in penalty.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

The research report will be posted on the University of Windsor Research Ethics Board website.

Web address: http://www1.uwindsor.ca/reb/study-results

Date when results are available: December 2016

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca
Or
Center for Research, [redacted]

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I understand the information provided for the study [*insert title*] as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

_____
Name of Participant

_____ _____
Signature of Participant Date

_____ _____
Signature of Investigator Date

These are the terms under which I will conduct research.

Appendix E: Request for Feedback

"Dear Students,

I would like to get your feedback about the experience of participating in the study. You may share your thoughts on both the process and the material. You may choose to post your answer anonymously. Just check the Post Message as Anonymous box below the messages box. Your participation in this section is voluntary.

Here are some questions you may address:

- How did you feel about the presented material?
- What piece of information from the presentation drew your attention most? Why?
- Will you use any information that you learned from the presentation in your teaching? If so, what will it be and why?

You may also add any other comments or suggestions; they will be greatly appreciated. You are also invited to response to your peers' posts.
There is no required length for your responses, so write as much as you would like.
Thank you so much for your time and collaboration. "

Appendix F: Results of Reliability Analysis of Instrument A-CIS

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Using stories that teach respect to animals	12.31	94.142	.610	.	.712
Discussing the differences between animals and humans	12.58	98.974	.365	.	.727
Using role-playing to show how animals may feel	12.73	96.765	.427	.	.722
Playing videos that show the reality of food production*	12.92	107.994	-.125	.	.754
Encouraging students to talk about their pets	11.92	100.154	.301	.	.730
Discussing the educational value of sea worlds	14.08	105.514	-.016	.	.750
Bringing a live exotic animal to the classroom	13.58	104.254	.032	.	.748
Inviting students to bring to class traditional dishes from various cultures	11.81	106.322	-.022	.	.744
Using videos showing animals performing tricks	13.38	100.006	.211	.	.736
Organizing trips to a humane society*	12.69	105.262	-.012	.	.752
Inviting speakers to talk about current political issues	12.88	98.426	.295	.	.730
Discussing pros and cons of globalization	12.31	95.582	.590	.	.715
Introducing students to environmental organization	12.23	97.145	.624	.	.718
Using reading materials on social justice issues	12.04	99.238	.551	.	.723
Organizing trips to a circus that uses animals	13.04	99.718	.221	.	.735

Engaging students in service learning at a local animal shelter	12.58	103.294	.114	.	.741
Engaging students in service learning projects making backyards more inviting to wildlife	12.73	96.125	.389	.	.724
Teaching how to control populations of such pest species as raccoons, possums, and squirrels	13.35	103.915	.038	.	.749
Discussing materials that show how hunting together helps develop a bond between parents and ® children	13.15	95.495	.352	.	.726
Discussing how hunting helps control deer population	13.42	95.934	.315	.	.729
Dissecting frogs for educational purposes	13.38	95.606	.406	.	.722
Using electronic alternatives to dissecting frogs	13.04	96.678	.368	.	.725
Collecting photos of insects living near us for a science project	12.35	99.515	.391	.	.727
Collecting insects living near us for a science project	13.50	93.780	.470	.	.717
Engaging students in caring collaboratively for a classroom pet *	14.62	112.006	-.359	.	.762
Engaging students in building collaboratively a bat house	12.65	101.355	.210	.	.735
Teaching about animals across the curriculum	12.23	98.745	.402	.	.725
Introducing students to online petitions advocating animal causes	12.85	94.855	.523	.	.716

*Bolded questions were removed to increase internal consistency of the scale.

Appendix G: Demographic Data

Demographics		Control Group	Experimental Group
Age	Equal or Under 35	4	5
	Over 35	9	8
Gender	F	10	10
	M	3	3
Ethnicity	African-American	0	2
	White Caucasian	8	6
	Hispanic	1	9
	Indian	0	1
	Middle Eastern	3	3
Region of Birth	US	9	9
	Middle East	2	2
	Europe	1	0
	Asia	1	1
Type of Area growing up	Urban	6	11
	Rural	4	0
	Suburbs	3	2
Social Class	Middle class	13	11
	Working class	0	2
Occupation	Teacher	13	10
	Other	0	3
Years of Teaching Experience	5 or less	2	5
	More than 5	10	8
Grade level	K-8	7	6
	High School and Adult	6	4
Subjects you teach	Language arts	3	8
	Other	9	4
Children	Yes	11	10
	No	2	3
Age of your children	0-12	9	9
	12-adult	7	5
Companion animals in your childhood	Yes	8	10
	No	4	3
Kind of pet in childhood	Dog	6	10
	Cat	2	1
	Other	9	14
Companion animals now	Yes	6	6
	No	7	7
Kind of pet now	Dog	3	6
	Cat	3	1
	Other	2	3
Do you eat	Meat	10	11
	Fish	11	10

	Eggs	10	11
	Dairy	11	11
Diet	Non-vegetarian	9	12
	Semi-vegetarian	2	0
	Vegetarian/ Vegan	0	0
Religious/spiritual	Yes	10	12
	No	3	1
Religious affiliation	Atheist	0	1
	Christian	7	8
	Muslim	3	3
	Hindu	0	1
Political orientation	Liberal	5	5
	Conservative	4	2
	Neither	4	5
Important causes	Environment	9	6
	Social Justice	8	9
	Children Rights	12	9
	Gender Equality	7	7
	Literacy	8	8
	Animal Welfare	4	7
Involvement in causes	Environment	5	2
	Social Justice	2	3
	Children Rights	4	3
	Gender Equality	1	2
	Literacy	6	5
	Animal Welfare	4	4

VITA AUCTORIS

NAME:	Boguslawa Dorota Gatarek
PLACE OF BIRTH:	Biala Rawska, Poland
YEAR OF BIRTH:	1960
EDUCATION:	College of Health Sciences, Lodz, Poland 1978-1980, Medical Analysis Technology Warsaw University, Warsaw, Poland 1982-1987 M.S. Clinical and Cognitive Psychology