

Dogs in the Hall: A Case Study of Affective Skill Development in an Urban Veterinary Program

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ABSTRACT

The purpose of this bounded single case study was to explore how an urban high school veterinary program impacted students' affective skill development. The program was unique because students were required to participate in internships with local animal care businesses and care for animals within the school veterinary laboratory. The responsibility of caring for the animals created a compassionate and safe environment sought by students and faculty alike. Animals provided students a hands-on learning tool facilitating career skill development, social and professional connections within the community, and emotional skill development. These findings may be interpreted as transferable to other agriculture or Career and Technical Education students in similar immersive experiences

Introduction

High school agriculture teachers often incorporate live animals into the curriculum to enhance educational experiences, increase student interest, and motivate students to learn about animal topics (Phipps, Osborne, Dyer, & Ball, 2008). As a component of classroom instruction, livestock or companion animals may be housed at a school and routinely used as a teaching aid (Talbert, Vaughn, & Croom, 2005). Live animals have provided opportunities for students to develop career skills, including caring for and safely handling the animals as well as managing an animal production operation. Beyond the classroom, students can also develop animal-related skills through livestock exhibition programs, supervised agricultural experience projects, and work-based learning programs (Bailey, Hughes, & Moore, 2004; Robinson & Haynes, 2011). While agriculture teachers utilize animals to enhance teaching and learning, the social and emotional benefits of regular animal interaction has not been well documented for high school students.

The study of how animals are utilized in an agricultural program can be viewed as a singular curriculum focus in Career and Technical Education (CTE). In fact, CTE often goes beyond traditional agricultural programs' use of animals as a teaching tool by utilizing immersive strategies. These strategies are linked to CTE topics that engage students in complex

skills and knowledge which involve prolonged experiences in experiential and laboratory settings as well as community partnerships in particular fields (Scott & Sarkees-Wircenski, 2001). A real strength of quality CTE programs would have to include these types of immersion activities. Thus, when we explore the emotional and affective benefits of students' interactions with animals in an agricultural classrooms, we envision that these benefits could also apply to other CTE immersion activities.

A large body of literature related to students and animals in the classroom which helped inform the background of this study. Researchers have explored children's supervised interaction with live animals as a means to develop elementary students' affective skills (Boyer, 2013; Kahn, 1997). Affective skills are a "...dimension of the educational process which is concerned with the feelings, beliefs, attitudes and emotions of students, with their interpersonal relationships and social skills" (Lang, 1998, p. 4). Elementary and special needs students developed a variety of emotional regulatory skills necessary for successful emotional development through live animal interaction (Bergin & Bergin, 2012; O'Haire, McKenzie, McCune, & Slaughter, 2013). Live animals have helped special needs students reflect on their own behaviors and better manage their future behaviors and avoid or reduce emotional crises (Anderson & Olson, 2006). Live animals introduced in school counseling programs have assisted elementary students in constructively coping with personal feelings of grief, loss, or anger that may have otherwise caused negative physical or mental outcomes (Flom, 2005). Limited research exists to substantiate how animals contribute to secondary students' development through high school agriculture programs.

The presence of animals in classroom environments can also enhance students' social skills. Allowing animals to play an active part in the classroom has resulted in students interacting more frequently and positively with their peers (Daly & Suggs, 2010). Students have also been observed to have fewer aggressive interactions with their classmates when animals were involved in the classroom (Hergovich, Monshi, Semmler, & Zieglmayer, 2002). Live animals have helped children develop feelings of respect, responsibility, and acceptance of others (Anderson & Olson, 2006; Daly & Suggs, 2010; Zasloff, Hart, & DeArmond, 1999). Further, live animals in the classroom have helped elementary students overcome negative, impulsive outbursts in school, which include defying adult figures; they have also helped students overcome extreme shyness (Flom, 2005). Children who work with live animals can learn to regulate their social and emotion-based regulatory skills in constructive ways. When individuals can learn to regulate emotions constructively, students are less likely to exhibit destructive coping tendencies later in life, such as suppression of feelings, alcohol use, drug abuse, or physical altercations (Bergin & Bergin, 2012).

Classroom animal interaction can influence students' affective skill development, including social and emotional aptitude. Affective skill development, which includes a wide array of immersive skills and topics, has become an increasingly important topic in education in recent years (Heydenberk & Heydenberk, 2005). Affective skill development has been of special interest to those researching Career and Technical Education (Aragon, Alfeld, & Hansen, 2013; Bailey, Hughes, & Barr, 2000; Boatwright & Slate, 2002; Crittenden, 2009). Allen (1999) analyzed the effects of career education in magnet schools where the study focused on intensive career preparation in large metropolitan areas. A survey of over 9,000 students found that

magnet schools helped students develop identity, immerse in an occupation, and develop caring relationships with their peers. Similar findings were reported by Kemple and Snipes (2000) in their study of nine career academies and over 1,700 students. While most individual Career and Technical Education (CTE) programs do not operate quite like a career academy, CTE programs offer career training and many provide immersion opportunities for students (Scott & Sarkees-Wircenski, 2001).

CTE would seemingly be ideal for developing students' affective skills based on the pragmatic and personal nature of most CTE curricula. In today's society, adolescent youth exhibit increasing levels of expressed emotional distress manifested through violence and conflict. These youth may lack the capacity to cope with internal feelings (Dessel, 2010). Student's affective skill development is important to reduce problem behaviors in school (Johnson & Johnson, 1996) and make a successful transition into the world beyond high school (Steinberg, 2005). Research on the impact of live animals in the classroom has focused mostly on affective development during the elementary years. Since many agricultural education programs utilize live animals as a component of instruction to develop cognitive skills, the question of interest here is: How can animals help develop students' affective skill?

Purpose and Research Questions

This study explores how animals in an urban classroom can develop students' affective skills. The purpose of this study was to explore how students' daily interactions with animals in a veterinary program impact their affective skills. This study was guided by the following research questions:

1. How did the presence of small, domestic animals in the veterinary laboratory help develop students' affective skills?
2. How did caring for the small, domestic animals in the veterinary laboratory and in veterinary-based internships contribute to students' affective skill development?

Methods

Serving as both authors and researchers for this study, we operated under a constructivist epistemology. The constructivist paradigm emphasizes openness and commitment to preserving multiple realities, which includes contradictory viewpoints during data coding. Data analysis was driven by the participants' responses rather than a predetermined theoretical framework (Guba & Lincoln, 2005). However, as former agriculture teachers, we had no teaching experience at a metropolitan school district or in a veterinary program. Case studies allow investigators to examine particular phenomenon in a bounded setting. The boundaries typically involve time, place, and context. Case studies seek to explore phenomena in ways that quantitative methods cannot by seeking to understand the phenomena from the perspective of the participants. Thus, this study included background literature about affective skills in adolescents when working with animals; however, this study does not include a theoretical framework. The inclusion of a theoretical framework to guide the data collection and analysis would have negated our ability to use the participant's experiences to frame the findings.

Research Design

The study employed a single case methodology, drawing on Stake's (1995) notion of an intrinsic case, which allowed us to investigate the unique program design, curriculum, and community contexts of the urban agricultural veterinary program. Specifically, we were able to examine students' affective skill development through their interaction with the animals of the program by framing the analysis around the boundaries of students' time with animals in the context of their CTE veterinary science program during a four week period.

The constructivist approach to case studies, as described by Stake (1995), begins with an etic issue. Etic issues are those objective research questions or issues brought to the study by the researchers and usually help initiate the study. Our etic issues centered on the factors which made one urban agriculture veterinary program successful. The program in question had developed a reputation for student success and involvement in the state. The openness of the etic approach allowed participants to reveal the emic issues (i.e., issues uncovered within the case) of the case. The emic issues emerged from observations and interviews. After the initial open-ended data collection and coding, we refined the research questions to reflect one of the emerging emic issues; the role of animals in students' affective development. This followed Stake's methodology of progressive focusing. The refinement of the research questions was based on the specific emic issue of affective student development.

Data Sources and Collection

We collected three types of data in this study: observations, interviews, and documents. The reliance on three different types of data sources helped ensure a triangulation of data. We observed over 20 hours of programmatic activities, including three agriculture classes and 11 internship site visits with the teacher, supervisors, and students.

We observed student interaction with the animals and how the animals were utilized in the classroom and during the students' internship experiences. Classes in this veterinary program were 90 minutes long and usually incorporated classroom experiences in the classroom and laboratory experiences in the adjacent veterinary laboratory. The students were required to do a semester long internship during their senior year in the field of veterinary science, which could include working at veterinarian offices, animal care facilities, animal-related learning centers, and animal-related retail centers. The responsibilities of students in these internships varied greatly. These observations were crucial to our analysis. We were able to see and listen as students interacted with animals within their normal agriculture program setting. We also observed a program advisory council between the teacher and community stakeholders in veterinary fields. We utilized this data much like the interviews, even though the input data based on supervisory participants discussion and comments were based on observation. Furthermore, the stories offered by the teacher and community stakeholders were valuable as we could not be in all places at all times to observe students. All observations were recorded as field notes and then typed in logs.

We interviewed 12 students, the agriculture teacher, three school administrators, and two internship supervisors. The agriculture teacher was interviewed on four different occasions. The adult interviews ranged from 10 to 45 minutes in duration, while student interviews ranged from 10 to 40 minutes. Interview questions were guided by the central question and the emergent emic issue(s) which followed. All interviews were audio-recorded and transcribed verbatim. We utilized interviews to help clarify what we were seeing and not seeing in the observations. Once again, the interviews of the teacher and internship supervisors provided background knowledge, observations, and stories which we could not access in our limited time observing and interviewing students. Interviews served as the main data point of a theme if the phenomena under discussion could not be observed.

Nine program documents were analyzed. The documents included program descriptions, annual reviews, and a report on student duties with the animals in the classroom. We utilized the program documents to explore the background of themes when appropriate. The documents as points of data were not as utilized in our analysis as the observations and interviews; however, the multitude and variety of data provided a multi-faceted view of the program and facilitated data triangulation (Stake, 1995).

Data Analysis

We utilized the constant comparative design for data analysis (Glaser & Strauss, 1967). Constant comparative design required us to follow a multi-step process of data analysis to transform the raw data into significant findings. We conducted five rounds of data analysis as we transformed the data into categories and themes, and then refined sub-themes. First, we read through the data early in the data collection to understand the phenomena within the program and worked as a research team to transform our etic issue into emic issues. These emic issues helped us develop our refined purpose and research questions. Second, we then read through the data after all of our data was collected and utilized our research questions as starting points for our data analysis. The third step of the process was to discuss our first batch of findings to illuminate common themes. We narrowed our themes down to a relative few. The fourth step involved was a second complete data analysis with the refined themes as the basis of our coding. We met after this second coding to identify sub-themes for each theme. The final step was to review the accuracy of the themes and sub-themes as well as develop a final abstraction of our findings, which was represented in the significance statement. The findings of the study were written as thick, rich descriptions.

Description of the Program

We utilized a bounded single case study to examine an urban high school agricultural program, which focused on veterinary science, located in a metropolitan city with a population of over two million residents. We purposefully selected this program because of its unique location, program design, student population, and the large number of the program's students entering into careers or higher education majors related to animal science. The program was located in an inner city technical school of 1,200 students. The four-story brick school building was located in an industrial area near the downtown metropolitan area. Demographics of the community roughly follow the demographics of the school with 50% of residents being African-

Americans; 40% were Caucasian, and 10% were a combination of Asian, Hispanic, and more. The school was a magnet school which emphasized science skills and college/career preparation in science areas. Students would apply to the school and then to programs in the school. Students were willing to travel great distances across the city to reach the school because they valued the school. The CTE programs in the school required students in those programs to have an internship during their senior year.

The veterinary technical classroom, located in the basement of the school, included an instruction area, an animal lab, kennels, a wash space, and a storage area. The agriculture program was designed as an upper-level program. Students would only take veterinary courses in their junior and senior grade levels. The students had no class options in the program during their freshman and sophomore years. The students would apply for the veterinary program during their first-two years, and student interest in the program was high because there were a lot of students interested in animals. Students in their senior year of the veterinary program were required to have an internship at a local business or institution. These internships were directly supervised by experts and practitioners. These internship experiences ranged from retail to education to animal care. The program was managed by Ms. Anderson, a young Caucasian, agriculture teacher from a rural area. This junior/senior program had a total enrollment of 33 students with 25 females and 8 males, which included 21 African Americans, 11 Caucasians, and one Asian student. Twenty-eight students qualified for the school's free/reduced lunch program (85%).

Trustworthiness

Credibility of the findings was built through triangulation at multiple levels. Initially, we established data source triangulation by validating participants' interview statements with their behaviors during field observations. Methodological triangulation occurred by building confirmation of the themes through interviews, observations, and documentation of the different cases. Investigator triangulation was established by having our research team reach a consensus on the emergent themes (Stake, 1995). Credibility was further built by our regularly conducting peer debriefing and member checks with participants as the themes emerged. Transferability was built by utilizing thick, rich descriptions of the case. Dependability and confirmability (Ary, Jacobs, & Razavieh, 2002) was facilitated through triangulation, comparing the emerging themes developed by each of us, conducting peer reviews, and maintaining an audit trail of coding.

Findings

Two themes emerged from the data: a) animals facilitated instruction and affective development and b) students became empowered. Each theme was divided into sub-themes and accompanied by participant quotes and observations to explain the theme.

Theme 1: Animals Facilitated Instruction and Affective Development

In this program, students learned valuable technical skills through daily instruction facilitated by live animal interaction. However, animals in the program played an essential role in student learning beyond hands-on technical skill development. Four sub-themes emerged: (a)

animals made students want to come to school, (b) animals helped students to understand dispositions and emotions, (c) animals provided life lessons for students, and (d) contact with animals elicited emotional responses.

Animals made students want to come to school. The presence of animals played a role in recruiting students to the school and veterinary program. The animals' presence caused students to ask questions about the program. Ms. Anderson, the teacher, understood the power of bringing an animal to a recruitment visit. She recalled, "We also have a big group of kids [who gather] around saying, 'I want to pet the puppies, I want to pet the dogs.' ...Especially when we have a little puppy or kitten. They don't care about anything else. It's a gateway." The influence of animals on students did not stop after students entered the program. Students and other faculty were encouraged to bring in their animals for washing, grooming, and socialization. The students provided low-cost grooming and socialization for pets belonging to both students and faculty. Ms. Anderson and the students viewed this service as a valuable asset to their school community.

The presence of animals positively influenced the students in the classroom as well. Dogs, cats, rabbits, lizards, iguanas, gerbils, hamsters, and rats were in the laboratory. Although the laboratory and classroom were separated, animals could often be found roaming in both rooms. Ms. Anderson recognized something as simple as petting a dog could elicit positive behavior from students while in class. "If they can quietly hold them and still write...and a lot of them can, they can have the dog sitting on the table. Their incentive then was the reward of getting to keep the animal if they did well. As Ms. Anderson noted. "The incentive to pay attention and do good is to keep the animal." Students felt a personal connection with the animals in the classroom which modified their behaviors and facilitated teaching and learning in the class.

In addition to the students' behavioral responses to animals, some students experienced larger feelings of connection to the school through their interaction with the program's animals. The school social worker witnessed students working hard so they could be a part of the veterinary program. "We have a lot of kids who want to be in the [veterinary technical] program and work with animals... it also encourages students... to get their grades up and work a little harder academically..." Leticia, an African-American female student, described how she was motivated to stay in school because of her work with the classroom animals: "Coming here, it makes me kind of look forward to coming to school and being with animals."

Animals helped students to understand dispositions and temperament. Students discussed how they learned to recognize animals' unique dispositions and discussed these dispositions in human terms. Jarvice worked at a large animal park with exotic and domesticated animals. His intern duties included feeding, cleaning, vaccinating, watering, and training animals. While working with different species of animals in his four animal rotations, Jarvice recognized each animal had a unique disposition which influenced how the animal acted. "There's a pony at [Petting Zoo] farm who was a bully and was pretty stubborn. That's understandable because he was young. He was like how certain kids are—stubborn, and don't want to do this or that. He was the same way." Nikki, a Caucasian female, recognized how animals entering her internship site carried an innate temperament which she must recognize

before working with the animal: “It’s okay to not like the animals, but you can try to understand the animals. Then they learn more about the animal and why it’s like that [the animal’s disposition].”

Subsequently, students who learned to recognize the disposition and temperament of animals developed strategies for working within those temperaments. Sophia worked in a grooming shop. She described how grooming behaviors can elicit a response from a dog: “Some dogs are calm, but then something so little like pulling ear hair or even a bath, they turn into a totally different dog. And I don’t think people realize that.” Sophia also learned strategies groomers use to influence animal temperament through their actions: “They [the supervisor] showed force, dominance, but without hurting the dog. I was always scared with like scruffing [grasping the animal’s loose skin above the neck] the dogs. She [supervisor] wasn’t scared, she really showed the dog who was boss, which really made me feel a lot better.” Students learned to look for differences in disposition among animals and developed techniques and approaches which helped them to work more effectively with animals.

Animals provided life lessons for students. Working with animals provided students with opportunities to learn life lessons such as patience, responsibility, and dealing with birth and death. Students learned patience as they encountered challenges and frustrations when bathing, grooming, and socializing animals. Lily, intern supervisor and groomer, reflected on how different it was for students when working in her grooming shop compared to working in the high school environment: “It [working with animals] really develops their level of patience, because it will rattle you. These are young people. It rattles you when a dog doesn’t want his nails trimmed or his ears cleaned out.” Lily perceived the lessons in patience were transferrable to other places in life, too. “It’s [Patience is] all a skill, like anything else you can learn. If someone demonstrates that for you, it spells it out for you. That’s really what we try to do here.” Sophia, Lily’s intern, concurred with Lily’s observation that she developed patience working with animals in her internship.

Responsibility was another important life lesson students learned through their work with animals. A large percent of students had little or no prior experience with animals or pets at home. For some students, this was the first time they felt responsible for the work of a business and the livelihood of another creature. Rachel, a black female student, reflected on the growth she saw in her classmates. “I think a lot of people have become more responsible... at home you have chores and stuff, but here when you have chores, you’re dealing with other lives... So I think people pay more attention to what they’re doing.” Students had full responsibility to clean cages, feed, and groom the animals in the laboratory. For instance, Slavine, a black male, prepared and fed a ration for an Aldabora tortoise as prescribed on the barn’s feeding board. Slavine joked about how when he first started, he worked to make the meal pretty, but now he understood that timeliness and ration accuracy were much more important to his supervisor. Trevor, an African-American male, felt ownership in the program animals. “We have living, breathing creatures in here we take care of. If they’re [the animals are] sick or if they cut their arm or their leg, we’ll try to wrap it ourselves or help them ourselves.”

Animals facilitated opportunities to deal with life and death experiences for students as well. Students witnessed animals being born and dying in the laboratory. These situations led to

learning opportunities where the teacher had the students reflect about the passing of the animal. In the advisory council meeting, Ms. Anderson reflected on one day when an animal died in class: “The day that the bunny died. All the kids cried. Yeah, they have her ashes. They loved her, and that was hard on them. They stayed down here all day, they were a wreck.” Students eventually came to terms with mortality and their emotions, as Suzie, a Caucasian female, was forced to deal with her ill pet Chihuahua:

One day I got home, and my mom looks at me and’s like, “Dog’s not moving.” “What do you mean the dog’s not moving?” “She won’t walk?” And I’m like, “Oh crap.” And I was crying, and blowing up Ms. Anderson’s phone, like, “What should I do?” Like I firmly believe if my dog’s in pain, as much as I hate to, I’m gonna put my dog down. I’m not going to keep my dog alive for my own satisfaction. So Ms. Anderson really, really helped me through that.

Students working with animals facilitated the learning process in the school and internship site. The daily work provided learning opportunities for teachers and internship supervisors to help interns learn job-specific skills and life lessons.

Contact with animals elicited emotional responses. Students, teachers, school administrators, and adult internship supervisors all indicated animals were a means for students to experience or exercise emotions that might not otherwise surface. Three distinct emotional responses emerged: (a) calming and coping, (b) trust and acceptance, and (c) anxiety.

Some of the students in the school were viewed by adults within the schools to have troubled home lives. However, the animals in the veterinary program were viewed as a way for students to escape the day-to-day problems faced by many students. Ms. Peters, the school principal, had witnessed many accounts of students interacting with animals and having positive results saying, “... animals are very calming... these kids have a lot of crap going on at home. So for them to be able to relax ... it’s like a respite. It’s like hugging a kid, or putting them in a calming place.” Students often referred to animals improving their mood; the animals had a calming effect for students. Stan, an African American student, said, “[Animals] can have that effect to where you can see them brightening your day. There’s a few times I came in here, having a bad day...a dog comes over and just rolls on me and it brightens my day.”

Animals were also used to help students and adults in the school cope with tragedy or loss. During one observation, several students and school staff members received the news of the untimely death of Ms. Johnson, a well-liked administrative assistant. For several days, students and faculty members would visit the classroom to play with a dog, hold a gerbil, or pet a cat. Ms. Anderson, the agriculture teacher, shared several instances when asked about animals as a coping mechanism. For example, she recalled: “I had a girl come in crying ...she said ‘My grandpa just died.’ I said, ‘Well, do you want to go take a bunny and hang out ...?’ ... It can be a really great way to help heal.” Animals were not only used as a centerpiece for instruction, but also as a means to help students and school staff cope with hardships in their day to day lives.

As students utilized animals as a calming and coping mechanism, feelings of trust and acceptance between students and animals developed. Student and adults both believed animals played a crucial role in helping people to open up. Students were, at times, discouraged by family or friends to show emotions, but the presence of animals provided an opportunity for

students to demonstrate their true selves. Ms. Anderson, the agriculture teacher, shared her experience with animals facilitating trust and acceptance:

...I think [animals] help kids learn to express their feelings, when they're discouraged [not] to at home. Especially for my boys, who a lot of times are taught to mask their feelings like the masculine man, you know? Like 'you don't show emotion, that's wrong.' So I think it helps soften them a little bit, so that they can do that more--kinda [like] just having someone, even if it's a dog or a cat that will accept you no matter what. An animal will love you...that's big for [students].

Students also expressed feelings of trust and acceptance towards animals. Jevon, an African American male student, described how he felt when interacting with animals: "...Animals are understanding. It's easier to bond with someone who can't talk...there's always something you won't like about [other people]. But with a dog and a cat, it's different." Although the animals were not intended to facilitate feelings of trust and acceptance, animals provided an opportunity to build trust and acceptance that students may not otherwise have experienced.

The calming and coping emotions, which could initiate feelings of trust and acceptance, were usually viewed to be an inherently good emotional experience. However, a third emerging response was student feelings of anxiety. Many students experienced anxiety because they knew animals were living creatures that can experience pain or suffering. Stephanie, a Caucasian female student shared the following: "... It hurts to see animals hurt. Sometimes I just want to cry. I remember, there was a [surgical procedure]...the dog woke up and started crying... I was so scared. I was in shock, I was shaking. I turned away..." The death or potential death of animals was an additional source of anxiety for several students. The death of an animal was almost like the passing of a beloved family member for some of the students. Several students made similar comments such as, "... When an animal passes away, it's a big thing here. We normally try to save it, if we can save it. We've had a few kids cry when an animal died..." However, the reality of death was viewed as a healthy means to gain respect for the value of life. Experiencing the anxiety and fear of an animal's death instilled an appreciation for properly caring for and potentially saving the lives of animals.

Theme 2: Student became empowered

A sense of empowerment was often expressed as a result of student experiences with animals in the veterinary program. Two distinct sources of empowerment emerged: (a) students became animal experts and (b) students became aware of their goals.

The veterinary program provided numerous opportunities for students to experience hands-on learning with animals in the veterinary laboratory in school and internship sites outside of the school. These rich learning experiences provided many students an opportunity to learn content, apply their knowledge through action, and receive feedback on their proficiency. Ms. Scott, an internship supervisor, saw the empowering value of working with animals stating:

Transforming this dog...from this scruffy, dirty, kind of ratty looking being, to this cute, happy, clean little being and then [to] see [the animal] reunited with their owners It's a very nice moment when [we see] the owners' faces when they see how cute and gorgeous their pet looks. [Students] understand the

benefits of good grooming. These students have seen the gamut of these dogs.

So to make that transformation is one of the nicest things about our job.

Concrete experiences, such as grooming an animal, provided visual and verbal reinforcements for students regarding their expertise. Students often spoke of the fulfillment they felt knowing they had truly learned something from working with animals that could be used beyond the school or internship experience. Many students came to view themselves as “animal experts” and, in turn, felt they could contribute in some way to their home, school, or community.

Working with live animals was, at times, identified as a means for individuals to solidify their decision of whether or not to enter an animal-related career. Students expressed how much they loved animals in their personal lives; they sometimes entered the program because they had pets at home. However, some students soon reappraised their beliefs after working with animals in the program. Sophia described how she realized the animal industry was not the same as interacting with pets at home, saying, “...as I got into it, I realized it’s not what I want to do...tell somebody ‘Your dog is gonna die, and I’m gonna kill it.’ It’s not my thing at all.” Other students, however, had been given an opportunity to reaffirm their initial desire to enter the animal industry as a career. Samuel expressed how his desire to enter the animal industry had been strengthened from the live animal experiences saying, “...We clean the cages, bathe the animals, make sure they have food and water. That changes a lot of people’s ideas on what... is really going to go on in this field... it only made my passions grow stronger...” Regardless of whether the experiences influenced their future career plans, the experience was empowering because it provided students with a clearer direction toward their future occupational interests.

Significance of Study

In this case study, animals played a central role and served multiple purposes in the development of student’s affective skills in the high school urban veterinary program. Animals were the primary topic of classes and internship experiences; their explicit purpose was to help develop student knowledge and skills for careers in the animal care field. Animals served an implicit purpose to help students develop their affective knowledge domain. Animals allowed students to experience emotional responses they might not otherwise experience. Finally, the findings underline a community of care forming between students and faculty members with the human-animal interaction within the program. This program succeeded in accomplishing a difficult task: effectively bringing together the cognitive domain by learning knowledge *in and about* live animals as well as the affective domains by learning emotions *from* live animals. The limitation of this study must be acknowledged, including our inability to generalize to larger populations. However, these findings can be interpreted as transferable to similar agriculture students or CTE students in similar immersive experiences.

Conclusions / Implications / Recommendations

Animals provide authentic learning opportunities for students to develop career skills in dog grooming and veterinary practice. High School agricultural education has long espoused the benefits of hands-on instruction; this program is consistent with the “doing to learn” philosophy traditional to agricultural education (Phipps, Osborne, Dyer, & Ball, 2008). Students working with animals in the classroom, laboratory, and internship sites also develop a strong sense of

responsibility. This is supported by previous research (Wingenbach, Gartin, & Lawrence, 1999) where adolescent youth gained responsibility through working with animals in home projects and classroom animals. It is worth noting these studies all involved food (i.e., farm production) animals. Finally, students, intern supervisors, and faculty gave examples of how students developed patience through animal interaction which was unique in the literature.

Many high school programs have animals housed at school in laboratories, classrooms, or school farms. Although constant student-animal interaction could cause disruptions to classroom instruction, the benefits of this interaction could outweigh the negatives. Practicing teachers should evaluate the scope of school projects to ensure that cognitive and career-based instructional goals are not emphasized at the expense of potential affective learning opportunities. If the animal facility is primarily labor-intensive, the potential of students' affective skill development may not be fully realized. We recommend further work on developing models of human-animal interaction in high school settings.

The finding that caring for animals can contribute to the social and emotional well-being of urban high school students was unique in the CTE and educational literature. Animals played a larger role than just curricular tools to facilitate student learning. Students expressed their emotions from the daily interaction and care of the classroom animals. Animals helped student process their feelings in a constructive way. Research has shown that building emotional skills is important for all students, especially in urban areas (Bergin & Bergin, 2012; Dessel, 2010; Heydenberk & Heydenberk, 2005). While this study focused on an urban high school program, animal interaction may be equally valuable to affective learning for rural and suburban students as well. Further studies could explore how rural and suburban programs currently utilize live animals in their classrooms and programs. For instance, do programs that utilize animals only for laboratory experiences develop students' affective skills? While this study focused on animals, could plants have the same capabilities to facilitate affective skill development?

The affective skill domain's benefits of encouraging immersion in a vocational curriculum topic are not new in CTE research. The findings of this study reaffirmed what other studies have found (Allen, 1999; Kemple & Snipes, 2000). Essentially, participating in in-depth and prolonged CTE experiences can increase students' affective skill sets. We want to stress that the findings herein relate to other studies, but the programs featured in past studies differed (i.e., not agricultural education or veterinary science). Nonetheless, the benefits to students' personal and interpersonal development were similar across these contexts. Research in CTE still needs to investigate the role of curriculum topics (e.g., veterinary science) and prolonged engagement with adults and peers in school settings. For instance, can students who are not interested in animals still reap the same benefits of this program as those students who were very interested in veterinary careers? In other words, is the key feature the students' high interest in the curriculum focus or the prolonged engagement with peers and adults or a combination of both?

School faculty experiencing positive emotional effects through interactions with classroom animals was unique in educational research. Faculty members would stop by the classroom daily to check on their favorite animals or hold an animal for comfort. The animals provided faculty members with an emotional outlet from the drama or stress of the school day. Research has demonstrated the importance of managing teacher stress to avoid burnout and

maintain job satisfaction (Kyriacou, 2001) and, in this case, animals in the school played a role in managing the stress for some school faculty members. This finding reaffirms the positive outcomes of integrating animals into school culture. The openness of a program which fosters strong human-animal interaction could also build strong communities of caring within the school (Noddings, 2005). We recommend more research on the potential benefits of such a community of caring centered on animals in a school setting.

Affective skills are crucial for students' successful entry into society. While many CTE programs may anecdotally develop students' affective skills, research on this topic has not been well articulated. Society expects students to acquire a functional level of affective skills as a product of their public education. However, educational reform and accountability are often measured in quantifiable assessments such as end-of-course exam results, grade level expectations, and teaching standards, leaving cognitive learning experiences as the priority in public school classrooms (Hyland, 2011; Steinberg, 2005). The power of this veterinary program was the use of animals to simultaneously teach cognitive, career, and affective skills. Schools and teachers can be accountable for the development of cognitive *and* affective.

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