

Impact of a Study Abroad Course to Mexico in Helping Undergraduate Students Affirm Their Career Aspirations to Become Veterinarians: A Qualitative Inquiry

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Abstract

Twenty-five students who participated in a study abroad course tailored to veterinary medicine during the summer of 2019 were the study's sources of data. Using photovoice and phenomenology research methods, we sought to explore, understand, and interpret the impact of a study abroad course on pre-vet students' views regarding veterinary medicine and their aspirations to become veterinarians. Students perceived that veterinary medicine in Mexico was structured differently from the U.S. approach and the nation's socioeconomic and agroclimatology conditions impacted the delivery of veterinary care and affected the work settings and practice of veterinarians. They not only discerned the uniqueness of veterinary medicine in Mexico, but also recognized its universal components regardless of the culture. The students perceived socio-cultural views about the purpose of animals were significantly different compared to the United States, and veterinary medicine in Mexico was practiced in accord with such. The course contributed to enhancing students' understanding of veterinary practice options and the professional expectations of a DVM, especially regarding large animal species. In concert with the proposition of human capital theory, the course helped some students confirm their career aspirations and others realize that veterinary medicine was not the best career fit. In some instances, the students' experiences challenged their preconceived notions of the veterinary profession. Higher Education Institutions should facilitate appropriate and timely learning opportunities for students to understand and confirm their interests in the veterinary profession while undergraduates. Other investigations should also seek to determine factors likely to influence pre-vet students' career choices.

Keywords: career preparation, global education, Mexico, phenomenology, pre-vet students

Introduction

Veterinary medicine has grown significantly since its conception as a profession in the United States; it continues to be a demanding occupation, and a very rigorous educational process for those individuals aspiring to become veterinarians (American Veterinary Medical Association [AVMA], 2020; Bierer, 1955; Peters, 2007; Smithcors, 1963). Many students enroll in colleges and universities in the United States with intentions to apply to a school of veterinary medicine, but a considerable number will not gain admission (Association of American Veterinary Medical Colleges [AAVMC], 2019, 2020; [Name] CoVM, 2020). Some important considerations for these aspiring veterinarians include application and admission requirements to schools of veterinary medicine, practice options within veterinary medicine, and professional expectations of a Doctor of Veterinary Medicine [DVM] (AAVMC, 2019; Chan, 2019; Ilgen et al., 2003; Lau, 2018; Lenarduzzi et al., 2009; National Research Council [NRC], 2013; Sprecher, 2004). These aspiring veterinarians are referred to as *pre-vet students* in this study.

Pre-vet students invest significant time and effort to fulfill a range of application and admission requirements to schools of veterinary medicine such as required courses, standardized tests, and veterinary-related experience (AAVMC, 2014, 2019, 2020b, 2020c; Burzette et al., 2017; [Name] CoVM, 2020; Jackson & Dawson-Saunders, 1987; Kogan et al., 2009; McRae, 2010; The GRE Test, 2020). They apply to an average of five institutions but only one in every two applicants may expect to be admitted to a school (AAVMC, 2020a; AAVMC & Dabdub, 2020). Academic course-taking and related performance is among the more rigorous expectations because most institutions require a minimum letter grade on course prerequisites if applying to their programs (AAVMC, 2020b). Pre-vet students often take these courses more than once to meet the minimum grade requirement and some may never achieve such (Burzette et al., 2017; Kogan et al., 2009). Also, they may not have a competitive GRE score and GPA at time of application (AAVMC, 2019; Educational Testing Service, 2019). Some colleges and universities offer a pre-veterinary (pre-vet) curriculum concentration or option, and although enrolling in a pre-vet option is not an admission requirement to schools of veterinary medicine nor does it guarantee admission, many students pursue this path before applying to schools of veterinary medicine (AAVMC, 2020b; AVMA, 2021). However, applicants may come from a variety of academic backgrounds, and some of them do not enroll in a college or university to fulfill application requirements (AAVMC, 2020a; AAVMC & Dabdub, 2020). Ample and broad veterinary-related practice experiences are also an important component to a competitive application but opportunities to attain such experiences may be difficult for many students (AAVMC, 2014). Moreover, existing opportunities are mostly related to companion animal practice and limited options exist outside of that type of practice (Lenarduzzi et al., 2009; Sprecher, 2004).

Veterinary medicine is experiencing an imbalance in supply and demand of veterinarians in practice options such as food animals versus companion animals, especially in rural areas of the United States (Kondalsamy-Chennakesavan et al., 2015; Laven et al., 2003; Rolfe et al.,

1995; Walker et al., 2012). About one-half of all positions held by U.S. veterinarians are in companion animal practices, and most are in urban and suburban areas (AVMA, 2020; NRC, 2013). Furthermore, a surplus of veterinarians is projected for these locales, especially for companion animals, but a shortage is expected for rural practice, which often involves treating large animals (NRC, 2013). After applicants are admitted to a school of veterinary medicine, type of veterinary practice experience may dictate the focus areas they select and the practice options pursued after graduation (Amass et al., 2011). However, most veterinary practice experiences for pre-vet students involve treating companion animals in urban or suburban areas (Ilgen et al., 2003; Lenarduzzi et al., 2009; Sprecher, 2004).

It is important for pre-vet students to understand the professional expectations of a DVM, such as the long hours of work, the need to euthanize animals at times, and dealing with the emotional needs of animals' owners. Increasing rates of practice-related stress, depression, and suicide have been reported for veterinarians and at levels substantially higher than the U.S. population overall (Brody et al., 2018; National Institute of Mental Health [NIMH], 2019; Nett et al., 2015; Norris et al., 2017). Veterinarians may be at an increased risk of dying by suicide compared to the general U.S. population, especially female clinical practitioners working with companion animals, which is a majority of all practitioners and projected to increase (AAVMC, 2019; AVMA, 2020; NIMH, 2019; Stone et al., 2018; Tomasi et al., 2019). Multiple factors have been associated with stress, depression, and suicide rates of veterinarians, but student debt is likely one of the main causes (Platt et al., 2012, Strand et al., 2005; Tomasi et al., 2019). Tuition costs at schools of veterinary medicine are projected to increase; therefore, veterinarians will likely need to retire at an older age to offset their educational expenses (Chan, 2019; Lau, 2018; NRC, 2013). Experts recommend that individuals aspiring to join the profession have a broad understanding of the occupational expectations of veterinarians (AAVMC, 2019; Chan, 2019; Lau, 2018; NRC, 2013). These expectations are inclusive of their chosen profession's unique culture as well as the cultural contexts in which they will practice, such as rural versus urban settings and the implications that location will have on their types of practice, e.g., purpose or function of animals and owners' related worldviews (Amass et al., 2011; Daly & Erickson, 2012; Ilgen et al., 2003; Lenarduzzi et al., 2009). These experts have proposed to *deglamorize* the profession (Lau, 2018). For example, a social worker who developed a suicidal prevention program for the company Banfield asserted: "[The veterinary profession is] not all puppies and kittens and wonderful experiences. There's a lot of pain involved [with its practice]" (Chan, 2019, para. 12).

Studies have reported academic and career benefits due to students studying abroad. Therefore, short-term, study abroad courses may be valuable learning opportunities for pre-vet students. They would likely benefit from opportunities to explore, as early as possible during their collegiate experience, whether veterinary medicine is an appropriate career fit for them. Because a study abroad course that offered real-world, hand-on learning experiences could help pre-vet students not only understand better the different practice options in veterinary medicine

but also affirm their career aspirations to become veterinarians (Geyer et al., 2017; Jon et al., 2018; Paige et al., 2009), this inquiry was warranted.

Conceptual and Theoretical Frameworks

This study was undergirded conceptually by human capital theory (HCT) which comprises the array of abilities individuals can acquire that may positively impact their well-being (Becker, 1962, 1994; Mincer, 1958), including work-life, career-related pursuits. These abilities or skills are attained through the knowledge gained from formal, non-formal, and informal education, training, and other experiences, and are also shaped by individuals' personality traits (Becker, 1962, 1994; Mincer, 1958). The experiences undergone by undergraduate students who participate in a study abroad course may help them to affirm professional aspirations while also impacting their overall well-being. Study abroad courses can be an important contributor to human capital development depending on the students themselves, their respective career motivations and aspirations, and the learning contexts they experience (Arghode et al., 2020; Jon et al., 2018; Kronholz & Osborn, 2016; Paige et al., 2009).

Interest-based motivation theory (IBMT) (Hidi & Anderson, 1992; Krapp et al., 1992; Renninger et al., 1992) served as the primary theoretical lens through which to understand and interpret the study's findings. According to IBTM's proponents, interest is the preference of an individual over a range of choices, and is, therefore, the main motivation to execute an action (Hidi & Anderson, 1992; Krapp et al., 1992; Renninger et al., 1992). IBMT researchers have theorized two components of motivational interests: *personal interest* and *situational interest* (Hidi & Anderson, 1992; Krapp et al., 1992; Renninger et al., 1992). Personal interest can be defined as an individual's long-term preference of one action over other possibilities (Hidi & Anderson, 1992; Krapp et al., 1992; Renninger et al., 1992), and situational interest is operationalized as the condition during which an individual's interaction with a context and moment-specific activities may capture their attention (Hidi & Anderson, 1992; Krapp et al., 1992; Renninger et al., 1992). Situational interests may only have a short-term effect on an individual's preferences, but, in some cases, can have a longer impact and thereby influence one's personal interests in the future (Krapp et al., 1992).

Therefore, we hypothesized that the extent to which situational interest influenced the students' personal interests – their aspirations to become veterinarians or affirmations of career choice – would be the impacts resulting from participation in the study abroad course. This posit guided an investigation aimed to explore the relevance of a study abroad course on pre-vet students' understanding of the veterinary profession, including cross-cultural experiences and the differences and similarities they were likely to observe between the United States and Mexico. All learning derived from the students' study abroad course experiences, whether confirming or disconfirming their interests in veterinary medicine as a career choice, stood to further capacitate them with knowledge, skills, and attitudes of personal value as well as worth to society. This

nexus supported the complementarity of our study's conceptual and theoretical frameworks.

Purpose and Research Questions

As part of a larger mix-methods case study, this qualitative inquiry sought to explore, understand, and interpret the experiences of students who participated in the study abroad course AG 3803: International Study Tour in Agricultural Sciences and Natural Resources. Three research questions guided this study: a) What were the students' perceptions regarding the practice of veterinary medicine in Mexico? b) What were the students' perceptions about the influence of culture on the practice of veterinary medicine in Mexico? and c) How did the study abroad course impact students' decisions to affirm or disconfirm their career aspirations to become veterinarians?

Methodology and Procedures

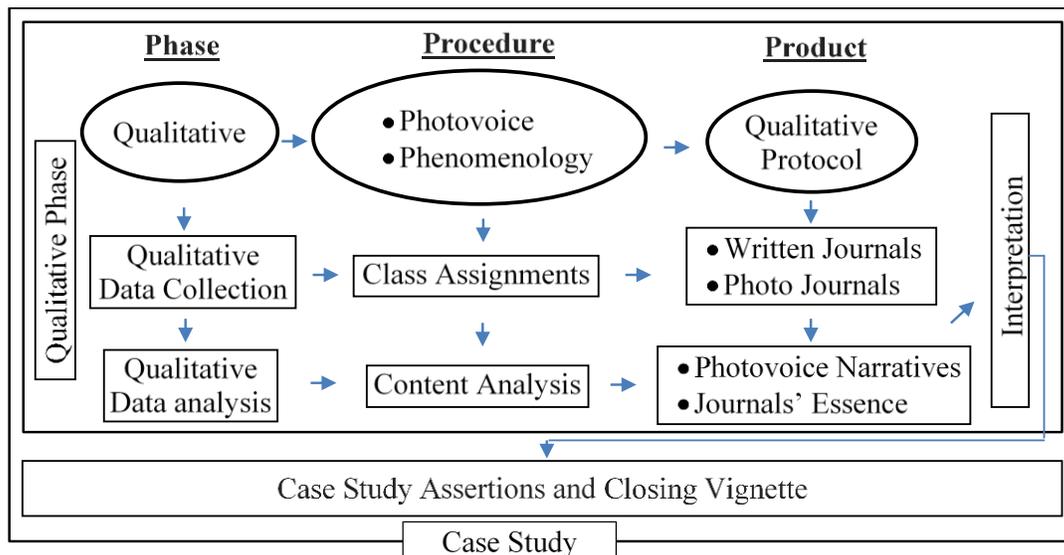
Tracy's (2010) eight big-tent criteria were followed to achieve excellent quality in the study: worthy topic, rich rigor, sincerity, credibility, resonance, significant contribution, ethics, and meaningful coherence. The lead researcher acknowledges that their level of involvement in designing, promoting, administering, teaching, and evaluating the course could have influenced understanding of and reporting on the phenomenon. They maintained a reflexive approach during collection, analysis, and reporting of the study's data to inform and guide the research process (Shaw, 2010), and introspectively examined their actions and decisions throughout it. Bracketing, as augmented by keeping a reflexive journal that included extensive field notes, was done to mitigate the potential effects of the lead researcher's biases (Tufford & Newman, 2012).

A case study, mixed methods [CS-MM] approach (Guetterman & Fetters, 2018) was used as the research design for the larger investigation. The case study consisted of an intrinsic single case (Guetterman & Fetters, 2018; Stake, 1995) that included three research phases, i.e., qualitative, quantitative, and qualitative, with priority given to the qualitative phases of the embedded, mixed methods design (Creswell & Plano Clark, 2011). Our research procedures included several approaches used in the first qualitative phase of a larger investigation aimed to triangulate an understanding of the phenomenon studied and support its interpretation (see Figure 1). Leech and Onwuegbuzie (2007) highlighted the importance of utilizing more than one type of analysis in qualitative research to enhance data triangulation and overall quality in such research. Moreover, the results of a case study inquiry are organized by "[p]roviding first extensive description of the case followed by key issues [, important themes, or aspects] in the case" (Creswell & Creswell, 2018, p. 106). And the concluding format of such an investigation is about "[m]aking case study assertions and advancing a closing vignette" (Creswell & Creswell, 2018, p. 106). These provisos guided our study.

The research procedures we followed are displayed in Figure 1. We used photovoice (Delgado, 2015; Wang & Burris, 1997) and phenomenological procedures (Creswell & Poth, 2018; Groenewald, 2004; Guba, 1981; Moustakas, 1994) to collect data and guide data analysis (see Figure 1). Two course assignments consisting of students’ photo journals and written journals served as the sources of data. The lead researcher used textual content analysis to identify codes and frequencies in the data that led to the emergence of significant statements and themes.

Figure 1

The Study’s Design, Methodology, and Analytical Procedures



Phenomenology is a qualitative research approach that allows investigators to understand the essence of a shared experience as described by its participants (Creswell & Creswell, 2018; Creswell & Plano Clark, 2011; Creswell & Poth, 2018; Merriam, 2009; Moustakas, 1994). Data analysis in phenomenology focuses on identifying significant statements, meaning units, and textual and structural descriptions about the phenomenon as clustered by themes. These themes contextualize the *essence* of the shared experience manifested by a phenomenon and usually reported as a written statement (Creswell & Creswell, 2018; Creswell & Plano Clark, 2011; Creswell & Poth, 2018; Merriam, 2009; Moustakas, 1994). The findings and meanings derived from a phenomenological study may be transferable to other groups experiencing a similar phenomenon (Lincoln & Guba, 1985; Tracy, 2010). Transferability “is achieved when readers feel as though the story of the research overlaps with their own situation and they intuitively transfer the research to their own action” (Tracy, 2010, p. 845). Through their phenomenological study, Mukembo et al. (2017) were able to investigate the experiences of young, aspiring female agriculturists from Uganda who were members of Young Farmers’ Clubs. Their findings indicated that participation in the Clubs’ activities had transformative impacts on students regarding their choices to study agriculture (Mukembo et al., 2017).

We used photovoice as another qualitative research tool (see Figure 1). Photovoice involves photography that empowers people to express themselves more openly and more fully tell their stories (Delgado, 2015; Wang, 1999; Wang & Burris, 1997; Wang et al., 1998). Photographs can enhance and enrich our understanding of social phenomena (Harper, 1988). Also, a higher level of credibility can be expected in research involving photographs compared with only words because photographs are more about showing than telling (Delgado, 2015; Tracy, 2010). For instance, Uscanga et al. (2019) reported that photovoice allowed researchers “to gain in-depth information from students who expressed in images what may have been difficult to explain in words” (p. 26).

Twenty-five undergraduate students from [Name] University traveled to Mexico from June 16 to June 25, 2019, as part of a study abroad course and were the subjects of this investigation. The course had a higher participation of students usually underrepresented in study abroad at colleges and universities in the United States. Fifty-two percent of them were minority students compared to a 29.5% participation rate at [Name] University and 29.8% in the United States overall ([Name] University, 2021a). Also, 36.0% of the participants were classified as Freshman based on their accumulated course credit hours compared to a 1.3% overall participation rate of such students at [Name] University and 4.0% for the nation ([Name] University, 2021a). Moreover, 20.0% were first generation college students compared to a 9.0% participation rate for the United States overall (National Survey of Student Engagement, 2020).

For the students’ written journals, they were required to choose topics of interest related to culture, the veterinary profession, or other related topics before traveling to Mexico. The students were instructed to collect information during the course and submit a written journal of at least five pages in length within two weeks after returning to the United States. For their photo journals, the students were required to submit at least 10 photographs related to culture and/or the veterinary profession in the context of Mexico that included a written description of what each photograph represented from their perspectives. Because the assignment was part of the course’s evaluation, the topics of the photographs were circumscribed to Mexico’s culture and its veterinary profession, but the researchers did not intend to overly condition the students’ expressibility (Delgado, 2015). Therefore, no other guidelines or examples for taking and submitting the photographs or writing the descriptions were provided. The students were only encouraged to compare and contrast the cultures and the veterinary professions of Mexico and the United States. The course assignments yielding data for analysis reflected students’ acquisition of human capital, e.g., veterinary skills building, as well as their personal interests, including cross-cultural experiences due to the unique context of Mexico and the practices of its veterinarians. As such, HCT and IBMT made for appropriate and complementary underpinnings supporting the study’s design and execution.

The first step of data analysis was to classify the students’ journal submissions according to their content. This included three foci: culture, veterinary medicine, or a mix of both. As a second step, a word frequency analysis was conducted on the content of students’ written journals using the online site Browserling (n.d.) to identify the more frequent words written by

students in the aggregated text of their journals. As a third step, significant words used with a frequency of more than 10 times in the aggregated text, including grammatical variations, e.g., plural, or singular, were identified. According to Sandelowski (2001), qualitative researchers may uncover more meaning of a phenomenon by obtaining counts of words in addition to narrative descriptions. More frequently used words served as qualitative data codes for analysis. “A code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (Saldaña, 2016, p. 4). These codes were assessed to determine their contextual relevance and significant statements were identified in the journals to give meaning to the students’ most frequent written words. The statements were organized according to their fitness for achieving the study’s purpose, i.e., the statements were grouped together to support the emergence of themes. These themes served to derive the students’ lived experiences based on their written journal entries, i.e., a distillation of the *phenomenon’s essence* (Moustakas, 1994).

Regarding the analysis of students’ photo journals, the strategy postulated by Tsang (2020) for photovoice data analysis was followed. Tsang (2020) proposed four stages in photovoice data analysis: a) a photograph analysis based on the researcher’s interpretations; b) a photograph analysis based on the participants’ interpretations; c) a cross-comparison between the researcher’s and participants’ interpretations; and d) a theorization of themes developed during the cross-comparison stage. For the first stage of this analysis, the lead researcher coded the photographs into three categories according to their visual similarities: a) culture; b) veterinary profession; or c) other. To minimize distortion of the photo interpretation procedures, the photographs’ narratives were not used as a reference during this stage (Tsang, 2020). For the second stage, a word frequency count of the photographs’ descriptions was conducted (Leech & Onwuegbuzie, 2007) using Browserling (n.d.). The most frequent words found in the narratives were used to outline potential themes, i.e., as based on the students’ interpretations of their photographs. Both sets of data were cross-compared and contextual information was added to support emergent themes (Tsang, 2020). Representative photovoice interpretations consisting of visual themes and their narratives are reported in this manuscript.

Constant comparative analysis, keywords in context, word counts, and classical context analysis were among the techniques used to give meaning to word clusters appearing in the students’ written journals and photo journals (Leech & Onwuegbuzie, 2007). The lead researcher iteratively reviewed the data and refined and rearranged significant statements and themes as needed, similar to *lean coding* where significant codes and information expand as review and re-review of the data occurs (Creswell & Poth, 2018). Finally, and in accord with the recommended format for presenting a case’s findings (Creswell & Creswell, 2018), an overall closing vignette was derived, i.e., the *phenomenon’s essence* (Moustakas, 1994).

Findings/Results

Most of the students' written journals featured a mix of observations on veterinary medicine and culture, with five focused exclusively on culture. At least 180 words, i.e., *qualitative codes*, were used with a frequency of more than 10 times in the aggregated text of students' written journals, with the top 50 words ranging from 233 to 28 occurrences. For example, the words *Mexico* and *animals* appeared 233 and 229 times, respectively, and the words *difference*, *opportunity*, *Tex-Mex*, and *veterinarians* were found 28 times each. These top 50 words culminated in 33 clusters according to their contextual relevance and occurrence in the aggregated text of the students' written journals. Regarding photo journals, two-thirds of the photographs and their written descriptions were associated with *veterinary medicine*, one-fourth to *culture*, and almost one-tenth were classified as *other related topics*. More than 100 words were used with a frequency of more than 10 times in the aggregated text of students' written descriptions of their photographs, with the top 50 words ranging from 118 to 15 occurrences. These top 50 words culminated in 29 clusters according to their contextual relevance and occurrence in the aggregated text of students' written descriptions of their photographs. A total of 668 significant statements emerged from the aggregated text of the students' assignments, from which 340 corresponded to their written journals and 328 to the photo journals. Sixty-two themes were derived from these significant statements; 32 associated with students' written journals and 30 with their photo journals. Ten themes emerged from students' assignments as related to research question one, eight themes related to research question two, and six themes came from students' assignments as related to research question three (see Table 1). Significant statements, photographs with written descriptions, and a range of supporting words, e.g., *qualitative codes*, helped contextualize these themes. Representative examples are displayed in Table 2.

Table 1

Summary of Emergent Themes, Sources of Emergent Themes, Number of Students' Assignments from which the Emergent Themes Arose, and the Number of Significant Statements in Assignments as related to the Study's Research Questions

Emergent Themes	Source(s) of Emergent Themes		Assignment(s) Supporting the Themes		Statement(s) Supporting the Themes	
	WJ ^a	PJ ^b	WJ ^a	PJ ^b	WJ ^a	PJ ^b
	Research Question One (n = 10)					
Access to Care ^c	Yes	Yes	7	4	10	6
Animal Condition	Yes	Yes	7	12	14	15
Animal Productivity	No	Yes	0	7	0	7
Climate Influence	Yes	Yes	6	6	7	11
Comparison with the United States	Yes	Yes	9	14	14	27
Humane Treatment	No	Yes	0	9	0	9
Mexican Schooling	Yes	Yes	6	8	9	8
Range of Veterinary Procedures	Yes	Yes	8	15	12	39
Socioeconomic Influence	Yes	No	10	0	16	0
Work Settings for Veterinary Practice ^c	Yes	Yes	3	6	7	9
Research Question Two (n = 8)						
Animal Caretakers	Yes	Yes	4	1	4	1
Animals for Work ^c	Yes	Yes	13	4	20	8
Animal Functionality	Yes	No	6	0	6	0
Context-based Welfare Practice ^c	Yes	Yes	10	7	20	9
Give-back to the Community Tradition	Yes	Yes	5	4	12	6
Naming Animals	Yes	Yes	2	4	3	5
Presence of Animals	No	Yes	0	4	0	4
Traditional Practices	Yes	Yes	8	2	17	2

Table 1 (continued)

Summary of Emergent Themes, Sources of Emergent Themes, Number of Students' Assignments from which the Emergent Themes Arose, and the Number of Significant Statements in Assignments as related to the Study's Research Questions

Emergent Themes	Source(s) of Emergent Themes		Assignment(s) Supporting the Themes		Statement(s) Supporting the Themes	
	WJ ^a	PJ ^b	WJ ^a	PJ ^b	WJ ^a	PJ ^b
	Research Question Three (n = 6)					
Broadening of Career Perspectives ^c	Yes	Yes	1	2	1	3
Hands-on Learning Experiences ^c	Yes	Yes	8	4	13	4
Learning of Medical Judgement	Yes	Yes	5	6	6	6
Learning on a Range of Veterinary Procedures	Yes	Yes	11	18	34	39
Recommended Unique Learning Opportunity	Yes	Yes	5	6	5	7
Unique Learning Opportunities	Yes	Yes	7	13	15	28

Note. ^aWJ = Written Journals; ^bPJ = Photo Journals. ^cSupporting evidence for theme is provided in Table 2.

Table 2

Representative Entries derived from the Students’ Written Journals and Photo Journals with accompanying Descriptive Statements that support the Study’s Emergent Themes

Representative Statements from the Students’ Written Journals	Representative Photographs and Descriptive Statements from the Students’ Photo Journals
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Emergent Theme: Access to Care

Student 13: “Another difference in the medical practices of rural Mexico and the cities of Mexico is the basic care given to the animals. What is considered basic care typically is only food and shelter, the underlying basic care such as hoof trimming, brushing, and proper exercise is often overlooked in the rural communities. The exercise for most of the animals comes from working on the farm and pulling carts.”



S21P8: “The local people of the village . . . patiently await their turn for a veterinarian or veterinary student to evaluate and treat their equids. This clinic provides much needed free veterinary care for these animals that their owners could not travel [for] or afford to receive”

Emergent Theme: Work Settings for Veterinary Practice

Student 5: “The field days really demonstrated how important it is to be flexible in the area of veterinary medicine. The day was long and hot, animals kept coming to be treated, but they [, the veterinarians,] never once stopped to complain; the vets went with the flow even when they were tired.”



S3P7: “. . . This picture also shows that despite being within a rural environment, a surgery could be successfully completed. We took all measures possible to be safe and clean; however, you are still outside of a sterile environment”

Emergent Theme: Animals for Work

Student 19: “When visiting Mexico, I noticed that practically everyone that lived in the rural communities owned livestock animals which they used for work purposes.”



S3P2: “. . . Horses and donkeys are both usually working animals that perform very similar jobs. The dogs; however, are usually thought of as mostly companion animals. Even though working dogs are not rare. The dogs in Mexico are more part of the work ethic. They protect the donkeys, horses, and mules. They even act as herding dogs.”

Emergent Theme: Context-based Welfare Practice

Student 2: “The problem in Mexico is that the welfare of the animal is often tossed out the window due to the need to work.”



S12P1: “This horse has been like this for fifteen years. She has been able to work with her leg like this for the entire fifteen years. We would think that this horse needs surgery when we would see this. However, to the owner, she is fine. The owner doesn’t see a problem because she is still able to work.”

Emergent Theme: Broadening of Career Perspectives

Student 18: “Needless to say, [after watching the veterinarians work with the elephants] I walked away seriously considering becoming an elephant specialist.”



S1P5: “The visit to the tilapia research portion of the ranch was a very pleasant surprise to me. I think that as students with interest in veterinary medicine, we forget that our job doesn’t just lie within dogs, cats, horses, and cattle. Veterinarians do so much more than clinical work.”

Emergent Theme: Hands-on Learning Experiences

Student 11: “I have worked in a shelter before, and I did more hands-on training in Mexico than I have ever done in America.”



S4P3: “This is a picture of me checking the upper molars after the teeth were floated. The teeth had to be floated because they can cause an array of health issues. Before the procedure, the teeth were sharp and pointy and cause[d] lesions inside the mouth and on the tongue. After floating, the teeth were back to proper anatomical shape and no longer posed an issue to the equid.”

Conclusions, Recommendations, and Implications

The students were able to compare and contrast the practice of veterinary medicine between Mexico and the United States, as well as contextualize the differences and similarities (Jon et al., 2018; Kronholz & Osborn, 2016). These contextual factors impacted the quantity, quality, and overall access to veterinary care in Mexico, and affected the work settings of veterinarians and the veterinary procedures they performed (Arghode et al., 2020). Access to veterinary care in rural communities of Mexico is not only restricted by what people can afford but also by the availability of services. The only care animals usually receive in rural communities are the free clinics such as the one offered during the study abroad course in which the students participated (see Table 2). The condition of animals also depends on socioeconomic and agroclimatology factors. In some cases, animals may have been underweight or exhibited injuries, including significant scars and cuts or even deformities (see Table 2). Students not only discerned the uniqueness of veterinary medicine in Mexico, but also distinguished some of its universal components (Arghode et al., 2020; Geyer et al., 2017). In this regard, a student asserted: “Veterinary [practice] is different down under the U.S. but the language is something each veterinarian [sic] can understand, and that is the constant care for the welfare of each animal that enters their clinic.” This ability to conceptualize veterinary medicine in Mexico as a highly context-specific practice, yet also having universal components and manifestations, demonstrated the importance of providing pre-vet students with learning opportunities such as the study abroad course (Abrams, 1979).

The students also reflected on their own culture while learning about the influence of culture on the practice of veterinary medicine in Mexico. They contrasted the ways culture influences the practice of veterinary medicine in their nation and in Mexico (Jon et al., 2018; Kronholz & Osborn, 2016). The role of animals in Mexican society was new to many of the students and differed from their previous normative understanding and worldviews (Mumford, 1998; Oberg, 1960). They described the role of animals, especially their purpose and functions, as significantly different compared to the United States, and how the practice of veterinary medicine, care, and welfare of animals was informed by cultural traditions and norms (Jon et al., 2018; Kronholz & Osborn, 2016). Students saw the treatment of animals from a different cultural lens but still attached the meaning of medical care and attention to animal health. Another important cultural component of veterinary medicine in Mexico identified by students was the tradition of giving back to the community (Kronholz & Osborn, 2016; Paige et al., 2009). Veterinarians and veterinary students offer free services to rural communities in Mexico (see Table 2). Students also contrasted the education system of Mexico with the United States. A student commented: “The students here [in Mexico] come to the vet school out of high school, instead of obtaining their undergrad like we do here in the US.” Based on this, some students realized that their own interests in animals were more about the role animals play culturally in society than only the clinical aspects of veterinary medicine. This realization reinforced the value

of the study abroad course to help students expand their perceptions of veterinary medicine from a mostly exclusively clinical view to a more holistic, societally rooted and culturally influenced profession. The students saw veterinary medicine from a broader and more realistic perspective (AAVMC, 2019; Chan, 2019; Lau, 2018; National Research Council, 2013), and one perhaps expanded beyond an often-glamourized view (Lau, 2018).

Kronholz and Osborn (2016) highlighted the value of study abroad courses in helping students develop a positive view of career options. For admission requirements to schools of veterinary medicine, broad and sufficient veterinary practice experience is one of the requirements pre-vet students often have the most challenge fulfilling (Amass et al., 2011; Lenarduzzi et al., 2009; Sprecher, 2004). The study abroad course to Mexico provided students with valuable hands-on practice experiences supporting their understanding of the various practice options they could pursue. This attests to the impact of the course in helping students to consider the broad range of practice options within veterinary medicine. Moreover, considering that practice experiences of pre-vet students usually presage their choice of practice options in veterinary medicine (Amass et al., 2011; Ilgen et al., 2003; Lenarduzzi et al., 2009), revealing different opportunities to them may help address the imbalance between demand and availability of veterinary practitioners regarding different options in the United States (NRC, 2013). Future study abroad courses should feature hands-on learning experiences exposing students to the realities of the different practice options found in veterinary medicine. In addition, instructors of study abroad courses are encouraged to include leaning experiences with relevance to students' career aspirations to the extent practical depending on the enrollees' majors and interests.

Overall, the students' course participation and related situational experiences influenced and, in some instances, reinforced their career motivations and aspirations as postulated by HCT and IBMT (Becker, 1962, 1994; Hidi & Anderson, 1992; Krapp et al., 1992; Mincer, 1958; Renninger et al., 1992). Institutions of higher education should create or facilitate appropriate and timely learning opportunities for students to understand their interests in the veterinary profession more fully while undergraduates. Other investigations should also seek to determine factors likely to influence pre-vet students' understanding of the profession, including its opportunities and challenges.

Case Assertions

Assertion related to the practice of veterinary medicine in Mexico: The students perceived that the practice of and education for veterinary medicine in Mexico, including animal conditions and productivity as well as access to animal care, are more dependent on socioeconomic and agroclimatology conditions in comparison to the United States. That was reflected in the working conditions of veterinarians and the range of veterinary procedures they observed in Mexico during the study abroad course.

Assertion related to the influence of culture on the practice of veterinary medicine in Mexico: An analysis of students' artifacts and interviews revealed that they perceived the Mexican culture is strongly intertwined with the practice of veterinary medicine in Mexico as compared to the United States which was reflected in the way animals were used and the care they received.

Assertion related to the impact of the study abroad course on students' decisions to affirm or disconfirm their career aspirations to become veterinarians: Through this unique travel and study opportunity, students perceived broadening their career perspectives while learning medical judgement and select veterinary procedures through hands-on experiences during the study abroad course. This impacted their decisions to affirm or disconfirm their practice options and overall aspirations to become veterinarians.

Case's Closing Vignette

Nothing is more important to the profession of veterinary medicine than the individuals who seek to enter it, their preparation for such, their performance as veterinarians, and their long-term personal satisfaction and wellbeing. The study abroad course helped its participants affirm or, in some cases, disconfirm their practice options and aspirations to become veterinarians by actively engaging in culturally and contextually specific practices of veterinary medicine. In some instances, these experiences challenged their preconceived notions of the veterinary profession. This encapsulated the essence of students' shared lived experience (Moustakas, 1994) of the study abroad course to Mexico in which they participated.

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