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Assessing Readiness for Clinical Practice: Students' Perspectives of their Veterinary Curriculum

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Abstract

Studies describing the effectiveness of a veterinary curriculum from the student perspective are currently sparse. The overall purpose of this investigation was to describe students' perceived preparedness for clinical practice. Three focus group meetings with fourth year veterinary students were conducted. Data were open-coded and categorized to identify themes. Four main themes emerged: Challenging communications, Un/appreciating curricular experiences, Documenting demands impede case involvement, and Hungering for timely, effective feedback. Overall students felt comfortable talking to clients about medicine but less comfortable discussing euthanasia or money; they appreciated the split clinical curriculum but questioned the value of the 1st/2nd year courses; they felt that paperwork on clinical rotations negatively impacted patient involvement; expressed the need for well-defined expectations regarding grading/assessment and autonomy on clinical rotations. Despite the reported issues, students expressed satisfaction with the split curriculum and readiness to enter their chosen field of study.

Keywords

Clinical Education, Qualitative Research, Veterinary Medicine Students

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Studies describing the effectiveness of a veterinary curriculum from the student perspective are currently sparse. The overall purpose of this investigation was to describe students' perceived preparedness for clinical practice. Three focus group meetings with fourth year veterinary students were conducted. Data were open-coded and categorized to identify themes. Four main themes emerged: Challenging communications, Un/appreciating curricular experiences, Documenting demands impede case involvement, and Hungering for timely, effective feedback. Overall students felt comfortable talking to clients about medicine but less comfortable discussing euthanasia or money; they appreciated the split clinical curriculum but questioned the value of the 1st/2nd year courses; they felt that paperwork on clinical rotations negatively impacted patient involvement; expressed the need for well-defined expectations regarding grading/assessment and autonomy on clinical rotations. Despite the reported issues, students expressed satisfaction with the split curriculum and readiness to enter their chosen field of study. Keywords: Clinical Education, Qualitative Research, Veterinary Medicine Students

The clinical experience in veterinary medicine represents at least half if not more of the prospective veterinarians' education. Very little information is currently available regarding the effectiveness of teaching in veterinary education from the student perspective. Similarly, little is known about the teaching practices, learning opportunities or how teaching and learning supports the acquisition or development of clinical skills (Ironside, McNelis, & Ebright, 2014). "Despite the long history of the clinician–student–patient model, factors that influence teaching and learning in the [veterinary medicine] teaching hospital are largely unknown, and the resulting outcome may be inadequate" (Lane & Strand, 2008, p. 397).

Several veterinary medicine reports describe perceived preparedness for practice from an alumni perspective (Jaarsma, Dolmans, Scherpbier, & Van Beukelen, 2008; Hardin & Ainsworth, 2007) but this information may be somewhat altered by time and experience. Qualitative studies have described learners' perspective of clinical education in nursing (Ironside, McNelis, & Ebright, 2014; Killam & Heerschap, 2013) and medicine (Stark, 2003). Students have reported challenges to learning in this environment due to lack of mentorship, anxiety, and incivility (Killam & Heerschap, 2013). The need for research and scholarship regarding how students can be best prepared for practice is imperative (Ironside, McNelis, & Ebright, 2014).

The overall purpose of this investigation was to describe fourth year veterinary medicine students' perceived preparedness for clinical practice. Four subquestions were asked.

What were students' perceptions of their clinical education? How well prepared did students feel to enter their chosen area of veterinary medicine? What were students' perceptions of the knowledge and skills they had acquired? How satisfied were students with the school's curriculum, teaching and assessments? Findings from this study provide insight to faculty and administrators regarding students' learning experiences. Also, the findings help illuminate what aspects of clinical education best prepare students to pursue independent practice as clinician. This study offers insight regarding how professional school disciplines can utilize qualitative inquiry to explore student experiences during clinical teaching encounters.

Background about the College's Curriculum

At this veterinary medicine college, students spend the first two years in a classroom setting, then move into clinical rotations from May-December of their 3rd year, return to the classroom from January of the 3rd year to December of the 4th year, with the summer of that year available for externships, then return to clinical rotations from January-May of the 4th year. Thus, the clinical portion of the curriculum is "split" into two sections separated by advanced didactic content and externships.

Methods

The overall purpose of this investigation was to describe students' perceived preparedness for clinical practice. After receiving institutional review board (IRB # #2014-U-0943) approval, participants were recruited. During the recruitment process students received a description of the study and information about the duration of the focus group meeting.

Participants

Fourth year (n =101) veterinary medicine students were recruited to participate in the study via email invitations during their final semester of veterinary medical school. Twenty-five students, including 18 females, seven males, four Hispanics, one Black and the remainder White elected to participate in this study.

Data Collection Process

Each participant was assigned to one of three focus groups based on time availability of the moderator and the participating student. Three separate focus group meetings were scheduled to maximize participation. Students who agreed to participate in the study were sent the focus group questions and the informed consent prior to the scheduled meeting. The same questions were used for each focus group (see Table 1). Each student only participated once in this study.

Data Collection Procedures

The focus group moderator (LBH) explained purpose of the study at the beginning of each focus group. Each focus group was 90 minutes in duration. Signed consent and consent to audiotape was obtained before the moderator began asking questions. The focus groups were held in a private conference room of the school during a lunch time hour. Participants were provided with lunch although there was no monetary compensation. No faculty involved in the veterinary curriculum participated or were present during any of the three focus groups. The moderator instructed the participants to speak one at a time and not to interrupt another speaker.

Throughout the session, the moderator reiterated what participants stated to ensure accuracy and to allow others to hear what was communicated. Before moving onto subsequent questions the moderator paused and asked if anyone wished to add any other commentary. Thus, progression through asking questions was marked by restatements, seeking clarification, probing or elaboration, and checking to see if there were any additional comments. Prior to the close of each focus group, the moderator asked if anyone had anything else that s/he wanted to share.

The purpose of the focus groups was to elicit participants' perceptions of preparedness for careers and ask them to describe: (1) their comfort in talking with clients, veterinary staff and colleagues; (2) how veterinary school experiences prepared them for careers; (3) skills or experiences they wish they had during veterinary school; (4) specific areas they felt unprepared to practice; (5) apprehensions they had about entering your chosen area of veterinary medicine; (6) assessment methods that they preferred and which assessment methods they would like to see increased or decreased.

Table 1. Focus Group Questions

1. How comfortable do you feel talking to clients? Describe specific experiences.
2. How comfortable do you feel talking to veterinary staff? Describe specific experiences.
3. How comfortable do you feel talking to colleagues? Describe specific experiences.
4. How did your veterinary school experiences prepare you for the next step in your career? Provide some examples.
5. What skills or experiences do you wish you had during veterinary school?
6. What specific areas do you feel unprepared to practice?
7. What apprehensions do you have about entering your chosen area of veterinary medicine?
8. Regarding the veterinary curriculum:
    a. What would you absolutely keep?
    b. What courses or topics would you add or delete?
    c. What type learning experiences would you have liked that you didn't get frequently enough?
    d. What methods of assessment did you like best?
        i. Which methods would you like to see increased?
        ii. Which methods would you like to see decreased?

Research Team and Researchers' Positionalities

The research team for this study comprised one staff member (the Education Coordinator for Veterinary Medicine) and four faculty members (one, an experienced qualitative and published researcher and moderator from the College of Education and three from Veterinary Medicine). The three faculty at Veterinary Medicine included two from large animal internal medicine (one who is a clinician, one the clinic/hospital administrator) and one who is pathologist. One of the authors (LBH) conducted the focus groups while another (AK) recorded notes to indicate particular speakers, non-verbal cues and responses among participants. All interviews were audiotaped and transcribed verbatim by an individual not associated with the analysis.

Specifically, the first author is an equine veterinarian. Her research focuses on the equine gastric ulcer syndrome, pain management in the horse, and critical care of equine neonates. She has a concerted interest in veterinary medical education. The second author is instructional designer and media technology specialist with research interests in faculty use of online learning platforms and innovative approaches to teaching using technology. The third author is the associate dean for clinical services and chief medical officer for the veterinary medicine hospital. Her clinical interests include neonatology, exercise physiology, and endocrine disease. The fourth author is a pathologist. His research interests include the study of the mechanisms of host immunity as it relates to persistence of diseases, vaccine production,

nutrition, and pathology. He is particularly curious about innovative approaches to teaching. The senior author is an experienced qualitative and educational researcher who studies outcomes that accrue from pedagogical interventions and faculty growth in teaching, educational research, and assessment. Her research initiatives encompass faculty development, cultural competency, and the assessment of behavioral, cognitive, and attitudinal change. The group's shared interest was in assessing 4th year veterinary medicine students' perceived readiness for clinical practice. Following several discussions, they agreed to the suggestion to use qualitative inquiry and focus groups.

Data Analysis

Each of the five authors independently open coded the data using opening coding. Next, two pairs of authors met to categorize their open codes and then the full research team convened to analyze each set of categories that emerged across the three group of analysts. Creswell's (2012) strategies: triangulation, thick, rich description, clarifying researcher bias peer reviewer, and an audit trail were used to enhance the rigor of the data collection and analytical process (Table 2).

Table 2. Strategies Used to Check Accuracy of Findings

Strategy	How the Strategy Was Applied
Credibility Triangulation	Different data source (multiple individual focus group data) were used to build coherent justification of themes. Multiple analysts read each transcript, open-coded each dataset independently and then as a group.
Using thick, rich descriptions to convey findings	Thick rich descriptions supported by in vivo coding were used to convey shared experiences.
Clarifying the bias the researchers brings to the study	One of the authors is an experienced qualitative researcher and educational researcher. Three authors are professors in veterinary medicine; another is the educational coordinator in veterinary medicine.
Employing peer reviewer	Four out of the five authors served as peer reviewers for one another and corroborated the findings by reviewing and assessing the data to determine if similar conclusions of themes were created from in vivo coding, process coding, and data analysis. The analysts met to reach consensus on the emergent themes and to refine their directions.
Dependability & Confirmability Audit Trail	An audit trail that describes the data collection, coding and decision making processes in detail was maintained.

Each focus group transcription was analyzed as a separate set before proceeding to the next transcription. Researchers read each line and coded segments of the text that were relevant to the study's questions. They used initial (open) coding (Table 3) and focused coding. Initial coding is iterative, whereby fragments of data including words, lines, segments and incidents are closely studied. Using Charmaz's (2014) approach, two columns were employed. Small segments of the original transcription noted in the first column were categorized in the second column using gerunds followed by a name or phrase to retain participants' expressions, and specific meanings assigned. According to Saldaña (2013), the use of gerunds connotes observable and conceptual action in the data. The preliminary stage of analysis led to the focused coding where selected significant initial codes were tested against extensive data. The

constant comparative method was incorporated to move codes to better fitting codes or to other categories or themes. Some themes coalesced, while others expanded in the process. A sample audit trial of data analysis appears as Table 4.

Table 3. Initial Coding Sample

Transcript excerpt	Initial code
Focus Group 1, lines 326-329 "I think that I preferred the split clinics, split curriculum. I felt like going back into classes I was able to focus more on what was important and things came a lot easier to me."	APPRECIATING SPLIT CURRICULUM
Focus Group 2, lines 786-794 "The thing I would find most helpful is designating a timeframe in the day to have rounds because a lot of time most rotations, everyone is gone from 8:00-9:00 because they have some hospital meeting. They have their intern rounds, they have a residency seminars and the students are left to prepare for cases which is fine but there is no actual set time for student rounds."	GETTING TO ROUNDS
Focus Group 3, lines 782-789 "I guess the only thing that would be, having a little more freedom in the clinics which I know we have touched on a lot. But like being able to discuss estimates or euthanasia or difficult news to the owners or like having a little more responsibility rather than just following around a resident who is saying, do this, do that."	WANTING MORE AUTONOMY IN PATIENT COMMUNICATION

Table 4. Sample Audit Trail for Theme #2 Critiquing the Curriculum

Text segment	Findings/open codes	Category	Theme
"I have had to go out of my way to get my surgery experience on externships and like try really hard to get that kind of experience just because of the nature of the beast."	Going "out of my way"	Perceptions of courses and externship experiences	Curriculum
"Because now you have seen cases and now it is kind of ingraining it in your head so that you can pick out specific patients that you saw and then now you are back in the classroom and you can relate it all back together. And then it is nice to end on clinics."	Fostering integration	Reported value of the curriculum.	Curriculum
"…solidifies what you learn in class and it makes you realize what you don't know"	Solidifying learning	Appreciation to make their own experiences	Curriculum
"When we all first got in the clinic they started using that evalu thing and we put in all of our rankings for which ones we wanted and I think that most people if not all, really didn't get anything that they ranked highly which is kind of funny. They got a lot of things that they didn't rank."	Assigning unranked rotations	Criticisms of the curriculum and rotations.	Curriculum

Reading line-by-line and coding segments assisted in making supporting quotations more accessible. Data were analyzed inductively by coding and identifying participants' spoken words to support the categories that were identified. The methodical process of coding,

supported by direct quotes, and depiction of the audit trial displays the researchers' decision making. This rigorous and systematic approach allowed the researchers to feel confident that what they report is representative of participants' perspectives (Hatch, 2002).

Results

Four main themes emerged from the analysis (Table 5): Challenging communications, Un/appreciating curricular experiences, Documenting demands impede case involvement and Hungering for timely, effective feedback.

Table 5. Themes and Conceptual Definitions

Themes	Conceptual definition
1. Challenging communications a. Faculty b. Difficult Conversations	1. Desire for types of interactions with faculty and clients. a. Described difficult interactions with faculty b. Desire to discuss finances and euthanasia with clients.
2. Un/appreciating curricular experiences a. Split curriculum b. Impact values of 1st and 2nd year	2. Perceptions of courses and externship experiences. a. Reported the value of the curriculum. b. Appreciation to make their own experiences and criticisms of the curriculum and rotations.
3. Documenting demands impede case involvement	3. Desire for more hands-on experiences and opportunities to do clinical procedures and less paperwork.
4. Hungering for timely, effective feedback. a. Increasing rounds b. Recommending how to improve assessments	4. Desire to receive timely, comprehensive, personalized, and written feedback and standardized expectations. a. Expressed the desire to increase the frequency of rounds b. Participants offered suggestions for how to improve the ways in which they were assessed.

Challenging Communications

This theme included subthemes - faculty and difficult conversations. The first subtheme refers to difficult interactions with faculty while the second subtheme refers to participants' desire to discuss finances and euthanasia more frequently with clients.

Participants reported difficult interactions with a small number of faculty that often left them feeling maligned, intimidated, apprehensive, fearful and subject to condescension. One participant reported, "There are some clinicians that I would call difficult and kind of just want to prove that you are wrong no matter what you are saying. But I feel like that is good practice for dealing with difficult clients." She shared having "had one clinician that just drove me insane" but also expressed her appreciation because she will be more prepared in the future.

Others reported a reluctance to ask questions. As one participant stated, "asking questions will tank your grade, because it shows that you don't know things." Another participant expressed apprehension, "many of the patients have been seen for multiple diseases." This participant explained that the student's focus was primarily on obtaining a complete understanding of the patients' chronic diseases. She explained that, "it is hard when you don't want to ask too many questions because you feel like you are going to get shot down for it." One other participant reported being "verbally shushed" while when "trying to ask a question [aimed at clarifying the patient's history] during history taking in the large animal scene." She asserted that "students [are] completely pushed to the side and are not included" on some large animal rotations. She described how this event "traumatized" and shut her down completely, and shared that, "one of my biggest things is confidence and [this experience] did not help it."

Many participants described the anxiety they incurred during one veterinary medicine rotation. "You are basically scared every day for a month." Asserting that she did not have an issue with her personal level of confidence, she reported that some faculty "just do not all treat the students well, especially certain ones." Most participants reported this rotation was known for always making "someone cry." Another participant reported having observed a faculty member "blatantly disrespect[ing] a student in front of a client." The majority of the participants described particular clinicians who were "contrary for the purpose of being contrary and making you feel like you don't know what you are doing" which caused them to second-guess themselves.

A pervasive sense of fear coupled with not knowing something was an impediment to furthering student growth and diminished occasions to promote student confidence. Lacking a sense of assuredness, one participant feared being asked things that she did not know the answer to, because this would essentially demonstrate her "lack of knowledge." The deleterious impact of the aforementioned interactions was best summed up by a one participant who stated, "if we are going to be [veterinary medicine] doctors, we need to be confident in our decision making process. We don't need to be shut down and broken down."

Participants expressed that a minority of faculty were responsible for the majority of issues. One student estimated "I would say like maybe 3%." Another clarified that, "The few that are, are bad."

Others complained about the lack of educational experiences encountered during some clinical rotations. "The clinician never stayed on track and we never had any rounds." They characterized those interactions as "the clinician and the resident arguing over what to do" adding that they "never addressed the students, never explained what the case was, and what they wanted to do." Thus, students were unable to present, discuss, or ask questions about current cases, or receive faculty input regarding diagnostics or treatment planning. Students simply stood witness to watching the veterinary medicine clinician and resident "talking about some animal every morning for two weeks."

Participants reported feeling very comfortable discussing medicine with clients but less experienced discussing finances and delivering bad news. The latter omissions left them feeling unprepared for practice. They reported not knowing how much things cost, not having opportunities to talk to the clients and that the doctors did not even talk to them about money very often. "Client liaisons go in and talk to them and we are completely left out of the equation. I do think that it is something that needs to happen more." Another participant stated, "We very rarely ever discuss money with the clients."

Students reported the lack of preparedness in discussing finances as missed educational opportunities. One student stated that, "I feel like I am going to be leaving school and talking to clients about pets for the first time [absent necessary] experience." Another pointed out that, "Most of the time clinicians tell us that we are not allowed to discuss cost with them." In

contrast, another participant reported that in [one rotation] students had opportunity to "talk about finances to the clients" and that it "was very helpful." This occurrence was the exception. The student proffered that, "I think that should be a mandatory thing that should go on, because it is you and the client."

Another participant who had been a technician explained that, "The doctor would send me in the room to go over the estimate so that I would have experience with that." Despite not having this experience explicitly taught at the veterinary college, she reported that she, "tend[s] to ask the clinician or the resident how much it costs to do a CT for this [or]. for x-rays" [and] the costs associated with a particular diagnostic package."

Others wished that they had had the opportunity to learn how to relay negative news "I was on [rotation] recently and never relayed any negative news to anyone because they don't like to put that on the students." Lamenting, she explained that, "I am going to be a doctor in a few weeks and I am going to have to do that alone." With limited exceptions, participants rarely discussed a diagnosis of cancer with owners. Another participant shared, "A lot of rotations do not like you to discuss euthanasia with the clients unless they have already brought it up with them." Recognizing that the importance of these communications should be complemented by clinical experience, she acknowledged that although this might not be appropriate for junior year clinic, [by] "the second half of senior year clinic it would be nice to start doing that." Others concurred while pointing out the relevance of these communication skills to their own professional development. They echoed the importance of "having a little more freedom in the clinics to discuss estimates, euthanasia or difficult news rather than just following around a [veterinary medicine] resident who is saying, do this, do that." Along the same lines, students felt constrained in their client communication. "One thing that can be uncomfortable in a school setting is maybe you have an opinion that you want to say to a client when they have asked you a question but you need to still be under the doctors on the case." To stress this point she described a situation in which a client would ask: "What would you do if it were your dog?' Stuff like that can sometimes be frustrating."

Un/Appreciating Curricular Experiences

This theme included subthemes - Split curriculum and Impact values of 1st and 2nd year. The first two years of the curriculum was a didactic delivery of content. In the summer following the second year, thus, the beginning of their third year, students entered clinic rotations until January when they returned to traditional classes. They remained in classes until December of this senior year. They spent the final six months of their program in the clinics. Split curriculum refers to participants reported value of this curriculum and their description of how it fostered the integration between didactic courses and clinical application of that knowledge. They also reported how externships promoted learning.

Participants praised the split curriculum asserting that "going back into classes I was able to focus more on what was important and things came a lot easier to me. Also many found that "studying for boards was a lot easier." Participants reported that their learning was bolstered by "our clinical experience" and being able to integrate classroom learning with cases they had seen in the clinics. Another participant described her experience of eureka, "I finally understood what I had done in clinics and then going back into clinics I was like…I am a genius, look I actually know things." Seeing cases prompted the integration between conceptual and experiential learning in which participants were able to make the appropriate linkages, as this participant pointed out. [You] "pick out specific patients that you saw and you can relate it all back together." As one participant explained, the alternating between classroom learning, clinical experiences and classroom learning again "solidifies what you learn in class and it makes you realize what you don't know." Another pointed out "that first set of clinics

was really important [in getting me] to pay more attention to the important stuff in classes rather than just trying to study for tests." One other participant reported how the split curriculum helped direct her specialization She "was very thankful" for the clinic experience and the opportunity to return to the classroom. "It helped me to steer my course selection from there on out."

Value of the 1st and 2nd year curriculum refers to participants' expressed appreciation for opportunities to make their own experiences and criticisms of the curriculum and rotations. The impact value of the first and second year of the veterinary medicine curriculum was not nearly as esteemed from the students' perspective. One participant characterized the freshman year as "a placeholder" and felt that she "probably didn't retain very much." Another participant described the freshmen experience as the least useful. Limitations cited were the lack of live, or an insufficient numbers of animals. In physical exam class, they described practicing "on a fake model of a dog." However, "it didn't have any blood in the veins and you [only] could palpate but that was it."

One participant explained that when asked by her roommates, a first and third year student, she would respond and sometimes tell them, "You won't need to know it. I hate to tell you not to learn it, but don't worry" At other times she would explain why something was "going to be important" and then she would describe "a case example so [they could] see how it applies."

Although the split curriculum was lauded, participants spoke extensively about the selection limitations associated with clinical rotations**.** Students were not always able to enroll in their preferred rotations because too many students selected the same rotation or there was no faculty to teach a particular specialization. One participant explained that, "I just really wish that we had more of a choice in clinics. A lot of times there [a particular clinical rotation] that I really want and I go to administration and they say can you trade with someone." She explained the challenges of trying to trade rotations. "[It is very] difficult trading with people [because] the hospital has to have a certain amount of people in rotations. So if there is something that you either have no interest in or have already taken three times, you want to trade that for something that you really enjoy and a lot of times you can't."

Others described frustration or yearning. "[I had] anesthesia twice and really wanted to take cardiology" but was told to stay in the second anesthesia rotation because they needed an extra person there. "It is frustrating from a learning perspective because I am about to graduate." Another stated, **"**I was willing to give up pretty much any elective rotation to get [the] dermatology [rotation] and couldn't get one." Some participants wanted the school's administration to assist with the rotation issues. **"**They need to figure out their scheduling because it is not okay for a rotation to be overbooked and then [have another one] with less than the number of students that they normally have. That just makes for no learning at all." One participant complained about the difficulty with one particular medicine rotation, "[It] has been awful. There has been no learning whatsoever." She explained that, "there have been two or three students on the rotation" who were "in charge of all of the paperwork. We have learned absolutely nothing." She also described going in and working during her vacation because they were not enough faculty to serve patient needs. Why a veterinary medicine student is expected to take on a responsibility of this magnitude denotes a limitation of the school's curriculum. This type of deficiency warrants administrative attention to ensure that no students are expected to fulfill this role.

For some students, having to enroll in required rotations was pivotal in influencing their chosen veterinary medicine specialization. As one participant explained, small animal people who initially had no interest sometimes learned through required large animal rotations because "they enjoy it and I think that it is good to get that well-rounded experience."

Aside from opportunities to become enrolled in desired clinical rotations, participants discussed missed opportunities to acquire basic surgical skills that would be the bread and butter of a prospective clinical practitioner. One participant explained how a student could end up graduating without having performed a neuter unless they went out of the way and tried hard "to get that kind of experience." Yet others disagreed, while pointing the broad range of experiences that students could have. With commendation, one participant stated "the way that the curriculum is set up though is fantastic because they give us those opportunities to make our own experiences. So I think that most of us will be graduating with a lot of surgery experience even though we didn't necessarily get it in a planned course or a rotation." Another student clarified that there were lots of opportunities to obtain surgical experience such as shelter medicine and proffered, "maybe not in the surgery course, but if you seek it, you will find it."

Despite the mixed reviews students gave their learning experiences they reported feeling "very confident and qualified because of the education we received." One student surmised that the university had prepared their class "in an incredible way."

Documenting Demands Impede Case Involvement

Participants described their role in doing paperwork on clinical rotations. "Students are the first person to basically start the paperwork process. The student is responsible for getting the paperwork prepared and presented to the doctor." Other participant explained that, "Doctors don't know how to do the paperwork. So if they didn't have a student… sometimes they ask us like… How do you submit this?"

Others reported limited patient contact in some instances and described their experience "But I have not had the chance. I have had rotations where I have done the paperwork entirely for the patient, discharged it and never saw the patient all day until the end of it." She asked [what rhetorically], "How I can learn from doing that." Another stated, "They rely on us so much [for completing] the paperwork that we miss out on everything **…** on procedures and watching ultrasounds on our patients." Forfeiting opportunities, another participant reported, "You don't even want to go to the procedures because you have all of this paperwork hanging over your head. Going to the procedure is 20 minutes that you are not doing your paperwork and is 20 minutes longer that you have to stay at night."

One participant reflected on the benefits of doing paperwork and stated that, "It is good that we get to write up discharges … and practice writing those things out, because that is really your client communication. If you were not able to talk to the clients about the diagnostics that you did, this is your chance to kind of put it in paper form and practice that."

Participants theorized that they were burdened with excessive paperwork to the potential exclusion of seeing patients because the "hospital was trying to get as many appointments as physically possible in every single day in any rotation." They opined that the hospital was "outpacing the teaching part," and needed to "set up fewer appointments … spend more time quality time teaching and going through cases" and it should be prioritizing "the students rather than its business." They also felt that "the teaching part of the teaching hospital gets sacrificed for the hospital" and business components to ensure quality patient care and customer service.

In addition to being the primary person completing paperwork, several participants characterized their role on some of their rotations experience as "runners." In addition to being charged with completing the paperwork, students were expected to run and get animals, place animals in particular positions for diagnostics, pick up prescriptions and then return animals to owners. Inherently they were required to shift from one responsibility to another without transition. The demand to move from one activity to another necessitates the ability to multi-

task and/or the ability to execute immediate action. Rapid change and requests to switch from cognitive, visual and kinesthetic activities does not necessarily result in learning new knowledge or developing critical thought processes (Behar-Horenstein, 2014). In one rotation, "there was no introduction, there was no hello, … you go in, you get a history, and you do not do a physical exam even though it is the first time that the animal has been in here. You just grab it, bring it back to us, we do the exam, we do the scripts, we do the paperwork. We may have you run something to pharmacy and run back. Then you run the animal back to the owner. That was my experience." In one rotation, "You are just running around grabbing animals and putting them on the table. She explained that she appreciated "the need to understand how to position your animal, but that can take one or two days." Other than having one day to learn about interpretations, [for] the rest of the rotation, you are just running around grabbing animals."

The clinical experiences that were most beneficial "were ones where the technicians took care of a lot of the paperwork, [put orders in and submitted] blood work for you" so that it was the student who did the blood draw, took the history, conferred with the faculty on rotation and set up the diagnostics.

Hungering for Timely, Effective Feedback

Participants described wanting timely and constructive feedback, written commentary on rubric and comprehensive reviews. A lack of prompt feedback immediately following performance of procedures such as physical exams, left several participants grappling with not knowing how well they did and wondering whether or not their skills were adequate for the task. One participant stated that when she "first started clinics… I didn't know what to do with my hands as far as a physical exam." Similarly, another participant described his experience. He did not feel that the school helped prepare him for the role of performing 'the actual physical exam and using the tools that we will use as an actual general practitioner because we are taking rotations in specialized fields." By way of example he explained that, "I never learned how to use a regular ophthalmoscope." He explained completing rotation while admitting that. "I still don't know how to use it appropriately." Thus, without having an opportunity to use ophthalmoscope, a routinely part of a physical exam performed in practice, the student could not receive feedback.

Highlighting the disadvantage of not offering students timely feedback, a participant stated, "only recently in my senior year [did I] learn that I was not palpating lymph nodes correctly." She asserted that faculty "failed to pay attention … because they are so specialized and everything is so rushed."

The most frequently expressed concerns were a lack of timely feedback and the need for pedagogically authentic feedback. When asked if they had opportunities to review cases during rotations, one participant shared that while on emergency, "more often than not, there is not time afterward because you have already worked way too long and you have a lot of paperwork to catch up on." However, the same participant reported that at the end of the day that if a student took the initiative and asked a question "most people will be willing to sit down and talk you through everything."

Participants recommended that faculty use clear and consistent feedback to help students better understand how well they were progressing. One participant explained the value of receiving written comments. "They provide both positive feedback and [an indication of the] things that I need to work on. However, participants had difficulty understanding how to balance comments like, "great job" with a grade of a B- and then wondered, "Why did you give me that? Was it that you just didn't like me or was it something with the client, or did I do something wrong that I don't know about?" Other participants requested receiving written

comments along with their grade after each rotation "because sometimes you just get a grade with some numbers and I don't really know if there is something that I did really well or I really didn't do well on."

They described the incongruity between rating scales and letter grades. "You could give me straight 4's and that would be like B-. That doesn't equate to anything and writing "works well with clients" and giving a letter of B- grade without accompanying comments does not tell a student anything. Another reported that, "There is no correlation." She described how at times written commentary even seemed illogical. "I got complimented on how great my presentation was and then on a 1-4 scale, I got like a 2 or something. I was like; this really doesn't make a lot of sense." Concurring one other shared, "I just came off of medicine, worked really hard, did great and I felt like I answered all of the questions right and I get all 4's." The feedback he received was, "Great job. Keep learning. You did great! C+." Another participant shared that, "there are certain rotations that say that "We only give one A." Thus, no matter how well students performed, "We only give one A." One participant pointed out the subjectivity of grading. "You get graded on differently based on the clinician that is on and it all depends."

Several participants explained the flaws in the school's assessment system and asserted that the school lacked an academic standard. "I think that it is a very gray line that is very flexible and … for [the] integrity of the program here, we need to set defined parameters of what is a pass [rather than], Oh you were pretty awful C-, move on." Citing other concerns related to the school's maintenance of standards, a few participants reported, "I think that we have a 99 %-100% graduation rate and is that real? Is that like a valid measurement?" Also, "we just should not be in that situation where we feel uncomfortable with our classmates treating our own animals. You know, what does that say"? Yet another claimed that the practice of the high graduation rate may "cheapen my degree."

At the same time, participants wanted a system of assessment that took in consideration the realities of adult lives. "They should allow life to happen. If someone loses a parent or if something happens." This participant stated that, "some people have been really good about that and some people haven't" and elaborated, "Somebody ought to be able to miss a couple of days and make it up later." During one rotation, a participant explained how students were charged with "watching another student." They were asked to help the student, ensure that this individual did not get overwhelmed. They were also asked take call for her so that she did not become besieged with the myriad responsibilities. Asking students to be responsible for another member of their class cohort is irrelevant to their learning. Moreover, this is not something that should even factor into feedback received from faculty.

Another participant described the lack of consistency between the expectations of professional growth and the comments received. "On some rotations I [was given feedback indicating that] I was not nurturing enough of the learning environment for a specific individual… and stated that, "I didn't know it was my job to be a babysitter on this rotation." The participant's resentment in being expected to ensure the welfare of another student was unsurprisingly, palpable.

The majority of participants expressed a desire for daily rounds because it would provide "a full patient history" and because it was "very helpful just to if nothing else get the doctor words really situated in your mind." Others pointed out that not all rotations had rounds and that rounds were at the pleasure of "what doctor you might be on with." Without designated times to review cases, misunderstandings could not be clarified and knowledge gaps could not be addressed. Rounds can provide students with opportunities to present current clinical cases and seek input from faculty about diagnostics and treatment planning. They also allow faculty time to explore students' decision-making processes. Each of the activities is crucial to fostering the development of critical thinking and evidence-based practice.

Participants recommended establishing designated timeframes to ensure that each service held rounds on regular basis**.** Students explained the benefits of setting aside a designated time for rounds. “In [some rotations] you have rounds every single day from 8:00-9:00. You know what you are going to be discussing whereas that gets lost with other rotations.” In [another] rotation, “there is a certain hour of the day when [the faculty] is on clinics, the students are off of the floor and the technicians are handling the patients, because it is time for the students to learn.” Caring for patients ceases so that students can review cases. One participant proffered, “Nothing is scheduled during that time and you are rounding at 4:00 PM. If you are done after rounds, you go home and if you’ve got more stuff to do, you’ve got more stuff to do.”

Another participant pointed out the importance of having dedicated teaching rounds during business hours. “Not at 9:00 PM. I do not want to round for an hour on any topic.” She suggested that some of the clinicians “feel that they are doing you a favor by keeping you another hour to talk about everything that you saw that day” although as she explained, “at 9:00 PM, I have stopped learning.” This is an important point to consider. Learning is not likely to occur among people who have already worked a 10-12 hour day.

Participants imparted several suggestions to improve the current assessment system. A mid-block review, used by some rotations, was appreciated and recommended for widespread use. Another participant recommended incorporating the application of essential clinical skills as early as the freshman year. One student described how teaching to write SOAP notes would assist students. The SOAP note (an acronym for subjective, objective, assessment, and plan) is a method of documentation that health care providers use to write notes in a patient's chart. The subjective is the patient’s statement regarding the purpose of the office visit or hospitalization. The objective section includes information that the healthcare provider observes or measures from the patient's current presentation. Objective measures include the patient’s vital signs and measurements, such as weight and temperature as well as findings from physical examinations, including the affected systems or possible involvement of other systems, pertinent normal findings and abnormalities. The assessment is a quick summary of the patient with main symptoms/diagnosis, a differential diagnosis, a list of other possible diagnoses usually in order of most likely to least likely. The plan refers to what the health care provider is going to do to treat the patient's concerns including ordering laboratory or radiological work up, referrals, prescribing medications, and offering education.

He recommended implementing the following practice. “You get ten minutes to look this over and then I am going to start asking you questions. I am not talking like diagnosis questions or medicine questions that they don’t have, but what information do you have because that is what happens on clinics and that prepares you for writing your SOAPS on clinics. So you know what is supposed to be there.”

To build confidence and thinking in action, one participant suggested implementing an emergency clinical course in the 3rd year in which “testing is actually clinical based where we are showing them something, doing something.” He reasoned that the students would benefit more from being “forced to do things in front of other people” rather than taking multiple-choice tests.

Implementing feedback sessions was recommended to counter student misperceptions. As one participant reported often tests “we have had at the end of the clinical rotation, are not reviewed and sometimes we don’t even get a grade from it.” In this instance, offering a test review of the test could have bolstered student learning, by calling their attention to things that required further study, or by correcting misunderstanding.

Other suggestions related to changing the process of assessment, one participant reported, “You shouldn’t be assessed [by comparing you] to others. You should be assessed on yourself.” Another suggested creating standards that differentiated the performance

expectations by junior and senior student status. By specifying the type and frequency of skill demonstration such as, "we saw you do this three times; we saw you do this two times and you never placed a single catheter properly," transparency and accountability would be added to the assessment.

Discussion

Participants reported feeling prepared to enter the profession. However they provided extensive descriptions of the ways in which they felt their learning experiences could have been improved. Students offered several suggestions to improve the depth and breadth of their educational experience ranging from interpersonal communications, to receiving timely, comprehensive and constructive evaluations.

Participants' suggestions amplified the imperative to simultaneously couple conceptual and experiential learning. Specific examples included engaging participation in difficult client conversations, ensuring that clinical assessment and feedback were grounded in logic, standards, and defensible criteria, and defining student-centered learning. These suggestions were supported with examples already occurring at the school.

Challenging interactions between clinicians and students and the lack of positive role models have been reported in other clinical teaching environments such as nursing (Pearcey & Elliott, 2004). Even though the negative experiences appeared confined to a few clinicians, they exerted a profound effect upon many students. One qualitative report described "teaching by humiliation" in a medical school clinical setting (Stark, 2003). These interactions are clearly unproductive and have no place in a learning environment. Nursing students in a clinical setting reported similar challenges (Killam & Heerschap, 2013). They perceived pressure related to fear, inability to focus on clinical learning, and uncertainty, leading to a "downward spiral of challenges to clinical learning" (Killam & Heerschap, 2013). Time spent completing paperwork tasks rather than learning were also reported during direct observation and interviews with nursing students in a clinical setting (Ironside, McNelis, & Ebright, 2014). Educators need to be dedicated to students and approachable. Moreover, students need educators that are knowledgeable and facilitative (Gidman, McIntosh, Melling, & Smith, 2011). In many ways, the themes identified in this study were descriptions of stress. A variety of psychosocial risks factors may have coalesced into what was expressed. Specifically, interpersonal relationships (compounded by a hierarchical authority structure) or a lack of confidence in clinical skills and paperwork may have been persuasive. Students concerns about grades, versus the adequacy or inadequacy of their educational experience may also have been instrumental. To what degree each factor may have contributed to the findings is not known.

Research has shown that clinical instructors often lack the educational preparation and experience necessary for assisting students in the integration of theoretical knowledge and clinical skills development (Flood & Robinia, 2014). To what degree clinical instructors' preparation and experience in teaching or lack thereof may have influenced the findings in this study is unspecified. Interestingly and positively, the current study does not support previous research that showed that students felt unappreciated and were considered a nuisance to staff (Sharif & Masoumi, 2005; Algoso & Peters, 2012; Anthony & Yastik, 2011).

Findings from this study point out the need for creating clinical policies that outline the expectation for grading and assessing students. Such an action would allow for improved consistency and quality of education (Killam, Luhanga, & Bakker, 2011).

Faculty members at another veterinary institution echoed many of the challenges of clinical education described by students in the current study (Lane & Strand, 2008). Overlapping themes included the clinical learning process (appropriate supervision and ability to provide timely and effective feedback, communication skills development), effective use of

the clinical caseload (students as laborers vs. learners, limitations of a specialty caseload), who should be teaching (clinician educator's personality/style), and the clinical climate (building student confidence, prioritizing education, time constraints and competing distractions/demands (Lane & Strand, 2008). In general, though clinical education is a resource-intensive endeavor, clinical learning appears largely a mystery for which best practices have not yet been developed (Ironside, McNelis, & Ebright, 2014; Murray, Alderman, Coppola, Grol, Bouhuijs, & van der Vleuten, 2001; van der Hem-Stokroos, Scherpbier, van der Vleuten, De Vries, & Haarman, 2001). Similarly, strategies for integration of clinical and didactic teaching are needed across the healthcare fields (Flood & Robinia, 2014).

Qualitative studies are vital to understanding the impact of demands placed upon veterinary students as the body of knowledge and available specialties expands and veterinary curricula attempt to keep pace. Educators must be aware of how their actions, even those seemingly trivial, can impact students.

One limitation of the current study was the method of convenience sampling, suggesting possible participation bias on the part of the student participants. Despite this, the gender and ethnicity of the sample population closely mirrored that of the class as a whole. This observation is important given that gender and ethnicity may impact perceptions of behavior in a clinical setting (Oancia, Bohm, Carry, Cujec, & Johnson, 2000). The degree of consistency of the themes expressed across the focus groups suggests that results are probably representative of the class cohort. However, the researchers acknowledge the possibility that some participants may not have felt comfortable voicing their opinion in front of other students or they may have felt pressure to conform to the group consensus opinion. Based on the diversity of viewpoints shared within each focus group, the researchers did not believe that this was the case. Other limitations inherent to the use of focus groups (e.g., dominant voices, moderator influences, difficulty in making generalizations to the larger student body) as well as the general lack of literature on the rigorous analysis of the conversational processes are also cited as potential limitations. The researchers recognize that the largest group (12) is greater than what many investigators would advocate for as an upper limit on group size (often 8-10) (Krueger & Casey, 2000). Since our intention was to be inclusive of student voices, we did not wish to discourage individuals who agreed to participate.

Study strengths included inter-analyst verification of reported themes and the experience of the interviewer. Also, the author conducting interviews did not have prior interaction with the study participants, thus limiting the potential for bias. The use of focus groups for this type of study allowed for thick and rich description and acquiring insight based on the students' descriptions of their experiences. Moreover, this approach permitted opportunities to learn about the contextual components that impacted student experiences. Survey research or other forms of quantitative methods do not afford this type depth and breadth.

What and how clinical, client and faculty experiences contribute to student encounters are relatively undiscovered (Lane & Strand, 2008). Furthermore, which training program elements contribute to student acquisition of complex skills is not well identified (Lane & Strand, 2008). However, there is no disagreement that clinical education is vital to continuous growth, competency development, and linking theoretical knowledge with practice (Courtney-Pratt, FitzGerald, Ford, Marsden, & Marlow, 2012; Pollard, Ellis, Stringer, & Cockayne, 2007). Because clinical education is likely to vary among rotations and faculty, it is important to understand students' perceptions of their learning experiences and the ways in which teaching in the clinic prepares students for the practice of veterinary medicine.

Further research is needed to explore students' and faculty experiences simultaneously. This approach would enable synthesizing views from multiple perspectives to render a systems approach to responding to the findings (Killam & Heerschap, 2013). Other research needed is

documenting the linkage between educational experiences and the development of practice abilities. Prior to conducting these studies the nature of clinical experiences must be understood. The study reported here, however, represents a step forward in documenting the nature of clinical experiences.

Also needed are studies to identify how students can best be prepared during their clinical training and how the foundation for this learning can be best developed during the early years of the veterinary curriculum. Moving forward, research will hopefully elucidate the best way to efficiently integrate teaching into the clinical experience while still providing excellent service to the client and patient. Clearly, a task-driven culture where students are used as "runners" or focused on paperwork is not optimal in any of the healthcare professions. Finding ways to fully integrate teaching into the clinical curriculum will hopefully prepare better clinicians across all disciplines. These findings may be used to guide the college's curriculum reform and, hopefully, improve the environment and culture of clinical veterinary education.

Engaging students in the assessment of effectiveness of a curriculum can be challenging to assess; student perceptions may or may not provide a useful benchmark of performance of the curriculum. This can be especially true in a field like veterinary medicine where goals of the profession (e.g., developing practice ready skills across multiple animal species) may not be well aligned with individual student goals. Nonetheless it is just this type of inquiry that can be used to guide and improve the nature of clinical education.

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