



JOURNAL OF THE ASSOCIATION OF
VETERINARY TECHNICIAN EDUCATORS

WINTER 2023

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Journal of the Association of Veterinary Technician Educators (JAVTE)

The Journal of the Association of Veterinary Technician Educators (JAVTE), a peer-reviewed, scholarly journal, is the official publication of the Association of Veterinary Technician Educators (AVTE). Its purpose is to act as a publication for disseminating evidence-based research to people working as educators in the field of veterinary technology. The journal's emphasis is on encouraging collaboration among veterinary technology educators through scholarly inquiry relating to the understanding and/or improvement of educational processes and outcomes, organizational issues in education, concepts of teaching and learning, and student engagement based upon research, observations, and experience relevant to the field.

Submission Process and Deadlines

Papers will be reviewed using the JAVTE double-blind peer-review process and should be prepared using the JAVTE author guidelines (see Editorial Policies and Peer Review Process). Submission of papers is the author's acknowledgement of and agreement to JAVTE's ethical duties of the author policy.

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Letter from the President of the Association of Veterinary Technician Educators

Jennifer Serling, CVT, RVT, BVSc, AAS
AVTE President



Hello friends!! I hope you all had a wonderful Fall semester and holiday season. We are ramping up for an exciting 2023 with some amazing programming for our members. I am very excited to see this second edition of the JAVTE as the first one was phenomenal. I would like to thank the editorial board for their outstanding efforts and for making the relaunch of the journal a success!

I would like to make you aware of some changes in regards to the AVTE Board of Directors (if you watched my Presidents message in December then please feel free to skip ahead lol). In August while we were having a strategic planning meeting prior to the Philadelphia conference, Dr. Jim Hurrell our president-elect decided to step down from the board. This left us in a bit of a pickle. The board decided to nominate Tricia Gorham to the president-elect position. Trish accepted on the condition she could have the normal full two years in that role. To achieve this request, it allows me to stay on as President until 2024 rather than become immediate past president in 2023. Hopefully this pleases the membership as much as it does me as I am very excited to have an extra year to plan wonderful things for the organization.

Let's give thanks to Doc Jim for his DECADES of work in veterinary technology education. He has been an unwavering advocate for veterinary technicians and proper utilization of our profession. He has taught hundreds of credentialed technicians, many of them becoming educators and leaders in our field. He has always been a force to be reckoned with and I wish him the best in his well-deserved retirement.

You should have seen in your email and on our social media pages, the request to complete a survey on wellbeing. We recently formed a wellbeing committee to develop and provide wellbeing resources for you and your students. I encourage you to complete this (if you complete it, you will be entered in a drawing for a gift card!) This survey will help guide us into what is needed to help the vet tech programs introduce or incorporate more wellbeing into the curriculum or at the very least provide materials you can share. If you have any suggestions or comments in regards to this, please feel free to email me president@avte.net. We are gearing up for another wonderful time in California this upcoming August. Calls for proposals will be out shortly. I encourage you to volunteer your time to present at the conference. It is a great way to dip your toes into conference speaking without it feeling quite so terrifying. AVTE members are always so warm and welcoming and it is a wonderful atmosphere.

Again happy 2023 to my friends and colleagues. The opportunities and friendships developed through AVTE are what keep me motivated year after year. I thank you all for the continued support of the organization and look forward to another fabulous year!!

TEACHING

TIPS

&

TRICKS

Vincent Centonze, DVM
Hillsborough Community College

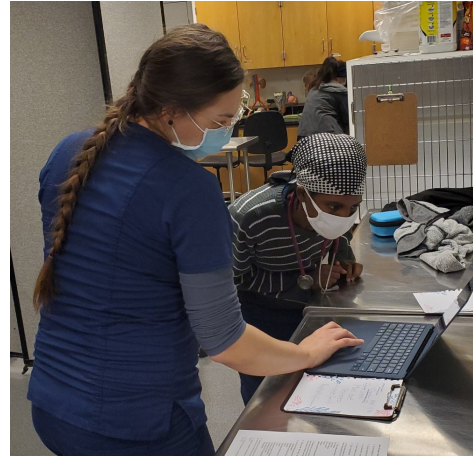
Hillsborough Community College Vet Tech Program
Starts Animal Wellness Clinic

Our vet tech program has started an Animal Wellness Clinic (AWC), following in path of other enterprises such as our college's Opticianry and Dental Hygiene Clinics. Under my auspices as the program veterinarian, and under the oversight of our vet tech faculty, students run diagnostic tests, and administer parasite prevention to dogs and cats belonging to members of our college community. I allow students to administer all vaccines with the exception of rabies, which are required by law to be administered by a veterinarian. I also double-check the diagnostic test and student exam results. We developed the AWC with the goal of providing students with hands-on experience in all aspects of clinic administration and operation including intake, history taking, exams and vaccinations, diagnostic testing, invoicing, and checkout. In addition, students work in a state-of-the-art environment with paperless record keeping. The students generate and maintain all records, files, and invoices on Digitail Practice Management Software. Appointments are also managed online through Digitail.

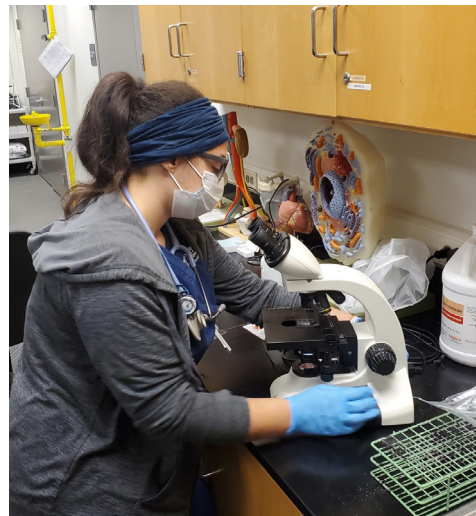
The AWC augments student externships at other veterinary facilities; however, we provide more hands-on experience than they are likely to receive during many externships. We also operate the clinics in conjunction with clinical practice and office procedures-related courses; students learn Digitail in the office procedures course so that they are familiar with the software when they start working in the AWC. In the future, we plan to incorporate clinics into Service Learning activities.

The clinics generate more revenue than expenses and we hope that we will offset costs for other areas of our vet tech program. The college has overwhelmingly patronized the clinics, filling appointments within hours. It is available to

college faculty, staff, students, animal rescue groups, and community charitable organizations. We conduct three clinics each term and two over the summer. It is a win-win-win situation for students, our college community, and the animals.



Students entering information into the database.



Vet tech student examining at a pet's cytology.



Vet tech faculty members working with student to enter information. Photo Credit: Vincent Centonze

Alex Johnson, CVT
PIMA Medical Institute

In my second year Pharmacology class I have my students create an endocrine garden, an antibiotic tree, and a behavioral modification drug pharm (farm). I hand out the blank, colorless drawings for them to fill in the correct drugs and color however they like, along with a list of drug names. The antibiotic tree has several branches, each branch covers an antibiotic mode of action, then can further branch out into drug classes. For example, you will find Clindamycin on the lincosamides branch that stems from the protein synthesis branch.

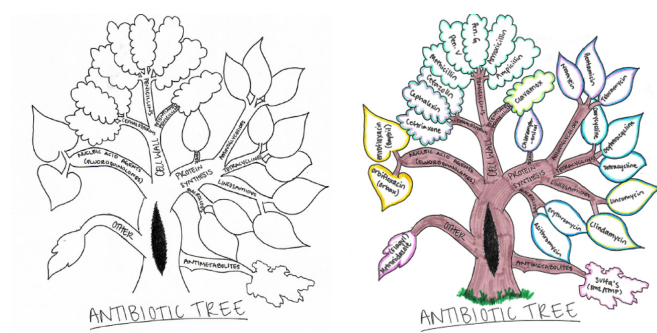
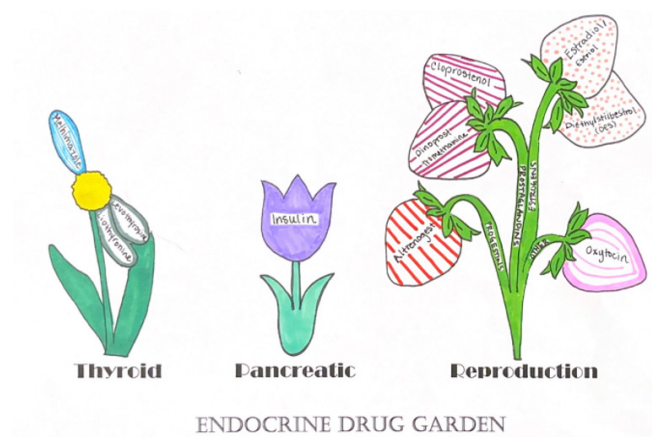


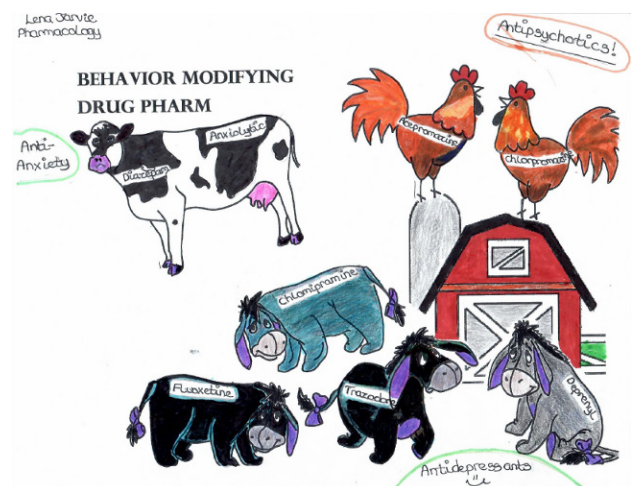
Photo Credit: Alex Johnson

For the endocrine garden, I have a thyroid daisy with 3 petals. These are specifically placed to have one petal on the top and two petals on the bottom, these are for the hyperthyroid and hypothyroid drugs of choice. There is a pancreatic tulip in the garden and a reproductive drug strawberry plant. The strawberry vines have the different drug class listed on them with a strawberry or two for the drugs that belong in that category. Example: the prostaglandins vine has a strawberry for Dinoprost tromethamine and Cloprostenol.

The behavioral modifying drug pharm is full of donkeys, chickens, and one cow. The donkeys are for the anti-depressant drugs, the chickens are to symbolize the antipsychotics and the cow is for the antianxiety drug.



By Vet Tech student Shaye Salt



By Vet Tech student Lena Jarvie

Liz Delage, RVT, MSc Candidate
Ross University School of Veterinary Medicine

The 4 basic principles of successful canine cardiac auscultation for students includes the correct use of a stethoscope, identification of external landmarks, recognition of normal versus abnormal sounds, and the ability to accurately interpret auscultatory findings.

Currently, a significant limitation in model-based auscultation training is the use of a canine model ‘patient’ that is permanently positioned in lateral recumbency. Other limitations of the current model include insufficient auscultation areas and a limited

number and variety of heart and lung sounds for review that are labelled with fixed terminology, which can become outdated.

Development is underway at Ross University School of Veterinary Medicine (RUSVM) of a canine cardiorespiratory auscultation model in standing position with increased auscultation areas throughout the upper and lower airways and cardiac regions. The new model for in-house use is designed to resemble a live patient thereby providing a simulated clinical learning experience for students. Paired with Apple® iPad “PawPad” technology, an unlimited number of cardiac and respiratory sounds can be played through the model to simulate auscultation in normal and abnormal patients.

Assessments are also possible with the new model because sound files can easily be masked on the “PawPad”. At approximately ¼ the cost compared to that of a commercial canine auscultation model, the Ross Vet model will help make auscultation training more accessible for veterinary students.

Jessica Swords, DVM
PennWest University

In order to teach students how to reconstitute lyophilized vaccines, I used the following technique. First I collected empty vaccine vials & removed the metal band from the top of the vial using a pair of hemostats (not good ones of course :)). I then used a syringe with water in it to place 1 ml of water in one of the vials. In the second vial I used a small funnel to place about a ¼ tsp of sugar inside the vial. The students could then practice mixing and drawing up the fake vaccines.

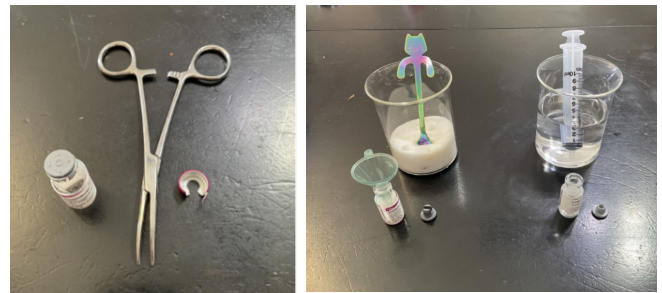


Photo Credit: Jessica Swords



Photo Credit: Liz Delage

ARTICLES

&

BOOK

REVIEWS

Moving Your Program Forward in 2023

Why electronic competency tracking is vital for your program

By Jeff Dykstra and Jeremy Johnson, Platinum Educational Group

Since the early 1990's, Electronic Medical Recordkeeping and Electronic Charting have been the primary sources for the vast majority of healthcare institutions. While these healthcare institutions have implemented electronic recordkeeping, many educational institutions have yet to adapt to technology and continue to train students to document their patient interactions and clinical cases on paper. This ultimately leads to training students that does not match the workforce they will be entering!

There are 5 main concerns with paper documentation:

- File cabinets and storage rooms full of ripped/torn/stained pieces of paper which contain case documentation and preceptor signatures
- Verifying student arrival and departure times for accurate timesheets
- Manual reporting and excel spreadsheets for tracking cases
- Students training for a job that no longer exists
- Manual counting and calculating of competencies to ensure graduation requirements have been attained

Third-Party Recordkeeping systems provide 100% electronic case counting, digital preceptor signatures, electronic timesheets, electronic evaluations, and a number of accreditation reporting requirements. These online systems do the work for you, so educators can focus more time on educating students and training them for their careers. There are many more benefits to utilizing

updated technology for student competency tracking and clinical rotation scheduling.

The first benefit is being able to provide accurate and up-to-date and complete information without having to decipher student and preceptor handwriting (practicing their doctorate?). When paperwork is handed in, it is often illegible and very hard to decipher the information. Also, now hold on to your hats folks, students lose paperwork! Electronic documenting eliminates these issues!

A second benefit of using electronic recordkeeping is it eliminates the need for manual calculations of case counts and lab competencies. Now, as much as educators LOVE to manually count calculations, online platforms automatically track students' cases, calculate accurate case counts, and provide reporting for accreditation purposes.

A third benefit is being able to accurately track students' arrival and departure times and locations. Online-based technology allows for students to check in and out of their clinical shifts via an app and supply timesheets with time-stamped GPS coordinates. No more clinicals happening at the mall!

A fourth benefit is that online systems eliminate the need for file cabinets or storage rooms full of papers. This ensures no loss of student documentation and complete transparency for site visitors to have access to the exact information they need in the timeliest manner.

A fifth advantage is the use of confidential

preceptor evaluations. Typically, students collect preceptor evaluations in an envelope which provides virtually no security or anonymity. However, automated systems allow for preceptors to log in separately from students and submit evaluations confidentially to instructors/clinical coordinators.

Finally, using a third-party electronic recordkeeping system allows the easy retrieval of documentation, signatures, and reporting. If you use paper documentation, you may need to sift through days/weeks of paperwork to find one signature. However, with electronic recordkeeping, you search by the date and find that student's documentation. This benefit alone can save hours a week for programs!

Conclusion

The fundamental goals behind third-party recordkeeping systems are to improve student engagement and assist educational staff with tedious administrative functions. In short, to make programs, educators, students, and preceptors (clinical educators) lives easier!! If we expect excellence from our students, then we need to give them the tools to be successful in their careers. Best-selling author, Rick Rigsby, once said, "Good enough is not good enough if it can be better. And better is not good enough if it can be best." Now is the time to move your program forward in 2023.

Book Review:

Laboratory Manual for Clinical Veterinary Technology

By OM Samples and MS Echols

Review by Anneke Moresco, DVM, PhD, Western Colorado Community College

This is a 235-page paperback, spiral bound manual for vet tech students. The manual is organized in a very logical manner and divided into clear chapters on all topics a competent vet tech should be proficient in. The manual covers domestic species (large and small) as well as some non-domestic species. Topics covered are those that apply to any species: Lab safety and zoonoses, hematology, blood smears, antigen-antibody patient side assays, coagulation, coprological exam, urinalysis, cytology (impression smear, fine needle aspirates, swabs) as well as large animal specific (California mastitis test and rumen fluid evaluation) and includes comments in the general sections pertinent to non-traditional species. Important procedures include necropsy, sample collection and shipping. The chapter on microbiology covers the basics that can be done in-house. Reproduction (semen analysis and vaginal cytology) is not covered.

Each chapter discusses the topic, provides figures for how to perform the procedure as well as figures to illustrate what the students are looking for and how to identify these under the microscope. The tables in each chapter are particularly useful to summarize for example the different kind of tubes for blood collection or different kinds of microbiology media: what they contain and what they are used for.

Although many clinics send out cytology to commercial laboratories, a technician who is able to properly collect and prepare and then evaluate cytology is worth a lot, because patients can be treated immediately based on preliminary assessments and is in a position to provide added

value services to clients.

The manual references the AVMA CVTEA and each lab is set up to meet/ teach specific skills from the skill list. One really nice feature for the instructors is that the materials and supplies needed are listed so it is easy to prepare for the lab. An additional nice feature is that the size of the manual as well as the font are easy to read and manage while in the lab.

Service-Learning in Veterinary Technology Education

By Jennifer Wells, DVM, University of Cincinnati, Blue Ash College

Although the term “service-learning” is not defined in a traditional dictionary, this method of increasing student engagement outside the classroom has been gaining popularity across the country over the last decade. The University of Cincinnati states that “Service Learning is a specially designed learning experience in which students combine reflection with structured participation in community-based projects to achieve specified learning outcomes as part of an academic course and/or program requirement.” To meet the educational goals of the University of Cincinnati Blue Ash Veterinary Technology Program’s (UCBA VTP), students participate in several required community-based collaborations.

For the past 15 years, the UCBA VTP has maintained relationships with local animal non-profits to offer free veterinary care to a large number and variety of animals in real-world settings. The collaborative partnerships to offer veterinary care in real-world settings is the very definition of service learning for our profession. The service-learning component of the VTP allows UC to give back to the community while also providing students with critical experiential learning that will position them as more qualified and attractive job candidates. Our students write reflective essays on these experiences as part of the courses. The real-world communication and interpersonal relationship skills, in addition to learning about humane organizations, care of large and farm animal species, and pet overpopulation issues in their area by interacting with these community partners, is just as relevant and important as the hands-on skills they are obtaining.

The VTP has made a commitment to building and maintaining strong community partnerships. These partnerships strengthen the VTP by providing resources for the physical, psychological, and emotional development of our students. Since 2007, the VTP has partnered with the SPCA Cincinnati and other area animal shelters in the Greater Cincinnati region to provide shelter dogs and cats with medical care, dental care, and spay/neuter surgery, helping make them more adoptable. VT students and faculty travel weekly to SPCA Cincinnati to provide veterinary care at the shelter. Additionally, animals are brought weekly to the UCBA VT building for medical care and spay/neuter surgery. Many animals at the SPCA are not yet spayed/neutered and suffer from various medical ailments, making them less adoptable. The shelters spay and neuter and test for all major illnesses before the animals are placed for adoption, but this comes at huge expense to the shelters. This program allays the cost to the shelters by providing free spay/neuter surgeries and basic medical treatment, including, but not limited to, vaccines, deworming, FELV tests, heartworm tests, and dental care. On average, this program provides medical care to over 300 dogs and cats and completes over 200 spay/neuter and dental procedures yearly.

The UCBA VTP also collaborates with Pets in Need, a Cincinnati non-profit organization, to provide veterinary preventive care. Since 2013, UCBA VT students and faculty veterinarians have donated their time to conduct weekly clinics on-site at Pets in Need to deliver preventive and basic veterinary

care to low-income pet owners. This collaboration helps relieve impoverished families of the high cost of providing their animals with excellent veterinary care, supporting the goal keeping families and their pets together. The care offered includes vaccinations, deworming, tests for a variety of animal diseases, and dental cleanings. On average, this program provides preventative and health care services to 250 low-income pet owners and 25 dental patients annually.

In addition, the UCBA VTP collaborates with local educational farms to provide a variety of farm animal species with needed healthcare. These farms provide a unique and valuable resource to the community offering significant opportunities for an urban population to experience the outdoors and learn about and interact with animals. Specifically, the UCBA VTP collaboration provides the nearly 200 resident horses, cows, and sheep of Greenacres Farm with physical exams, vaccinations, deworming, fecal exams, blood testing, hoof care, dental care, and radiographs as part of its community service program. The VT students also provide free preventative veterinary care to the 40 resident horses at Winton Woods Riding Center and provide care to the menagerie of animals at Parky's Farm, an educational farm within the Great Parks of Hamilton County. The collaborative partnership gives veterinary technology students valuable hands-on experience providing medical care to large farm animals in a farm setting. These efforts save the local farms time, money, and human resources, which can then be expended in other ways by the non-profits.

The work that the faculty, staff, and students do embodies the true definition of service-learning. The VTP has taken learning outside the classroom and is providing a needed service of real value to a variety of community organizations. This work has enabled the students to be engaged in the local animal community, provide a service to underserved animals and clients and to receive the benefits of a real-world educational experience that will immediately translate into a better understanding of their profession. The student

writings from these experiences are filled with rich learning reflections. Each student brings their own identity, perceptions, and preconceived notions to the course. Once they experience working in these environments, they gain a true perspective of how others of different backgrounds care for their pets. After working with shelter animals, they often reflect that they have a greater understanding of how shelters operate, why animals may end up in a shelter through no fault of their owners, and how to help alleviate the problems faced by shelters through education, foster and spay/neuter programs and pet identification programs. After working at Pets In Need, they often reflect that they never realized how much people who were underprivileged or had a physical or mental disability would have their lives enriched by owning a pet. And student field trips to the local farms are often the ones they remember with fondness, where they were able to provide valuable medical services to species that may have been unfamiliar to them; but they learned more than they ever thought was possible during the experience and had a lot of fun as well!

The Wristwatch - Archaic Timepiece or Medical Necessity

By Oreta M. Samples, BS, RVT, MPH, DHSC and Kingsley Kalu, M.D, MPH

Introduction

In the scope of modern human medicine perhaps the most antique yet modern tool available to nurses, technicians and other medical personnel is the wristwatch. While often perhaps not worn on the wrist, it may be pinned to uniform for easy access when assessing pulse and respiratory rates. “Counting time” is utilized in various ways including counting beats per minute, breathes per minute, or even during manual laboratory testing where activities must be timed. Likewise, veterinary personnel utilize timepieces in a similar fashion within the veterinary clinic or hospital setting. A recent exercise was conducted with a group of freshman veterinary technician students at a four-year University. The goal was to determine the proficiency of students at telling time as well as utilizing the second hand on an analog timepiece (wall clocks, non-digital watches) in their assessment of pulse and respiratory rates of canine patients.

Discussion

The increase in digital technology has had a huge impact on medical science in the 21st Century with many positive results. The current generation of traditional college students has embraced all of the modern marvels that comes with medical technology including digital and/or SMART phones and watches as part of everyday life. This has unfortunately led to an unexpected ignorance in some cases involving analog clocks as part of their technician’s toolbox, especially in students born during the “era of the internet”.

In a recent conversation with peers who were

veterinary technologists currently involved in technician education, it was noted that there is a lack of ability on the part of students to tell time or utilize an analog wall clock to assess an animal’s pulse in the laboratory. Upon further discussion, it was noted that few students owned an analog watch, instead displaying on their arm’s SMART watches, digital timepieces or relying on their phones to tell time. The technicians recounted horror stories of the student who when asked to take a pulse, first takes out their phone, puts it on the exam table, finds the “app” for counting seconds and then proceeds to take the pulse; this all takes place while someone else is struggling to hold a fractious animal. It was also observed that such devices were knocked off the table or in some cases picked up and chewed on by curious animal patients. This damage leads to further angst and drama in the laboratory, all which could be avoided by use of a simple wristwatch.

Although the students could not accurately assess a pulse or breath rate using an analog clock, they did understand the mathematics of calculating beats/breath per minute per ten, fifteen or thirty second intervals of counting and could calculate quite rapidly this information if they were given the number of beats/breaths, although some still resort to the calculator function on their phone. They, however failed to make the connection between the number of seconds and how this was displayed by the second hand on the analog clock. Some actually mistook the term “second” hand to mean the small (i.e. minute) hand on the clock and not the smaller continually moving hand on the clock.

Methods and Materials

On the first day of class in fall 2019 semester of VETY 1801: Veterinary Orientation, a 13-question quiz was administered to 43 students to assess their understanding of the mechanics of analog time-keeping as relates to assessing pulse or breath rates in an animal. The quiz was made up of four pictures of clocks (1 wall clock and three alarm clocks) plus nine “word problems” with the objective being to write in the time displayed/described in the question. The word problems consisted of five medical assessment questions related to either a heartbeat per minute scenario or breathes per minute scenario and four questions describing the placement of the three hands (i.e. hour, minute and second hands) seen on an analog clock with the student asked to write out what time it was based on the question’s description (without regards to the AM/PM determination).

The students were asked to complete the quiz within a 20-minute timed period at the beginning of class and told that there would be no grade received for this activity to alleviate the fear of failing that might further stress the student and cause them to rush through the test. 43 students completed the quiz. The quiz was collected and the instructor went over the answers in class while also demonstrating with an actual analog clock what the answers were and why.

A second demonstration served as a review session utilizing an analog clock with the instructor changing the position of the hands and asking students to tell what time it was. Throughout the term, within the course content, students were coached on further use of an analog timepiece anytime timed assessments were made using the analog clock that hangs in the classroom (which up that point, many students confessed they thought was hung in the room for decorative purposes).

At the end of the term, the same quiz was administered again at the beginning of the last day of class with the same instruction regarding not being counted for a grade and a period of 20-minutes being allowed for completion. A total

of 39 students took the quiz; the remaining four people are representational of those who dropped the course at mid-term. At the end, the quiz was collected by the instructor.

Results

Quizzes were separated into pre-demonstration (N=43) and post-demonstration groups (N=39). For the purpose of assessing the ability of students to accurately use an analog clock, the quizzes were scored as Passed (score of 70 or better) or failed (69 and below) for each group. The results were as follows:

Pre-Demonstration (N=43)

Post-Demonstration (N=39)

PASSED: 21 (48.82%)

PASSED: 22 (56.41%)

FAILED: 22 (51.17%)

FAILED: 17 (43.57)

Discussion

Clearly there is a need at the beginning of student’s matriculation through a veterinary technician’s program to assess their ability to read an analog timepiece. This is best covered in an Orientation style course which beginning students are normally exposed to during their freshman year. The fact that the passing rate of the aforementioned quiz only rose by 7.59% after remedial classroom reviews indicates that students do not take seriously the need for use of analog devices for common exam room assessments involving animal patients. This may be somewhat understandable as the students registered in the Orientation course at the University where this activity took place have not yet encountered hands-on laboratories where they are expected to develop skills such as heartrate/breath per minute assessments and therefore are not aware of the importance or the need for the common wristwatch. It should be noted, however that all freshman students are provided with a list of items they will be expected to purchase for use throughout their matriculation in the program; the wristwatch is one such item. It is equally clear that the additional one-time review addressing how to read an analog clock

is not sufficient to educate the class; rather this should be worked into the curriculum of the course over several lessons in order for students to achieve successful outcomes. It is also useful to consider alerting other faculty teaching other veterinary-related courses of this need and recruiting their help in including similar activities within the scope of their own courses. The goal of such endeavors should be to ensure that all students are capable of telling time and assessing common medical measurements utilizing an analog device before they begin hands-on, animal-related activities. The authors of this paper indeed take this a step further and suggest that no SMART devices, phones, etc. be allowed in the animal laboratory so that students are forced to depend on analog devices and also to protect such sensitive devices from animal-related damage.

Conclusion

Within the field of scholastic veterinary technology, there is a need to ascertain whether students are able to read analog timepieces as well as understand their usage. Despite the various digital medical equipment that is available, nothing can replace counting by feel or sight a pulse or respiratory rate. Not only are students practicing a vital medical monitoring activity, they are able to in some instances detect changes that are occurring such as fast or slow beats or breaths; information that may not be detected by digital or mechanical devices. This is also information that can be quickly passed on to the clinician who requires such vital information as part of their diagnostic work-up.

As instructors, we should be cautious of presenting an example of “over-reliance” on mechanical and digital apparatuses in the clinical situation as they can slow the timing process or themselves offer distractions. Rather, we should embrace the use of technology while still making use of some of what is often thought of “archaic” medical techniques that involve our five senses. These senses were around long before the machines and will serve us well long after the machine breaks down or...the power goes out.