



VETERINARY TEACHING AT ANIMAL SHELTER: EXPERIENCE IN CLINICAL CASES EMPOWERS STUDENT SKILLS

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UNIVERSIDAD DE LAS PALMAS
DE GRAN CANARIA



Facultad de Veterinaria

A woman with dark hair tied back, wearing a pink long-sleeved shirt, is shown in profile from the chest up. She is holding a small, fluffy grey dog with both hands. The background consists of a metal shelving unit with some papers on it and a wire animal cage to the right. The overall lighting is somewhat dim and the image has a slightly desaturated, muted color palette.

INTRODUCTION

(Spindel.ME et al., 2008)

Shelter veterinary protocols strive to improve the health and well-being of homeless animals through non-traditional but **science-based** and practical programs

Many veterinary schools are integrating shelter medicine into their primary curricula.



Shelter experiences offer a unique solution to teaching veterinary through outreach teaching initiatives, particularly in the realm of **hands-on** medical and surgical skills training (*Smeak.DD, 2008*).

(Stevens.BJ, Gruen.ME, 2014) (Smeak.DD,2008)

- Behavioural evaluation and management.
- Primary care.
- Diagnose and treat animals.
- Physical examination skills.
- Practical and cost-effective treatments plans.
- Spay-neuter surgery and general anesthesia.
- Real-world experience without interference from owners.
- The motivation to learn by doing.

In other countries we can find several examples that follow this educational trend

- Auburn university
- Colorado State University
- Cornell University College of veterinary Medicine
- Iowa State
- Lincoln Memorial University
- Michigan State University
- Midwestern University
- Mississippi State University
- North Carolina State University
- Ohio State University
- Oklahoma State University
- Purdue University
- St. George's University
- Texas A&M University

("All4Paws: Vet Students at work in the community", 2018)

In Europe





(Smeak. DD, 2008)

The veterinary teaching hospital have cases away from common clinical conditions to become highly specialized.

This condition may preclude a real life veterinary experience and training for students.

Another obstacle is that student ratios increase



We have participated in a shelter experience using a collaborative relationship model between Veterinary school of ULPGC and The Insular Shelter of Gran Canaria

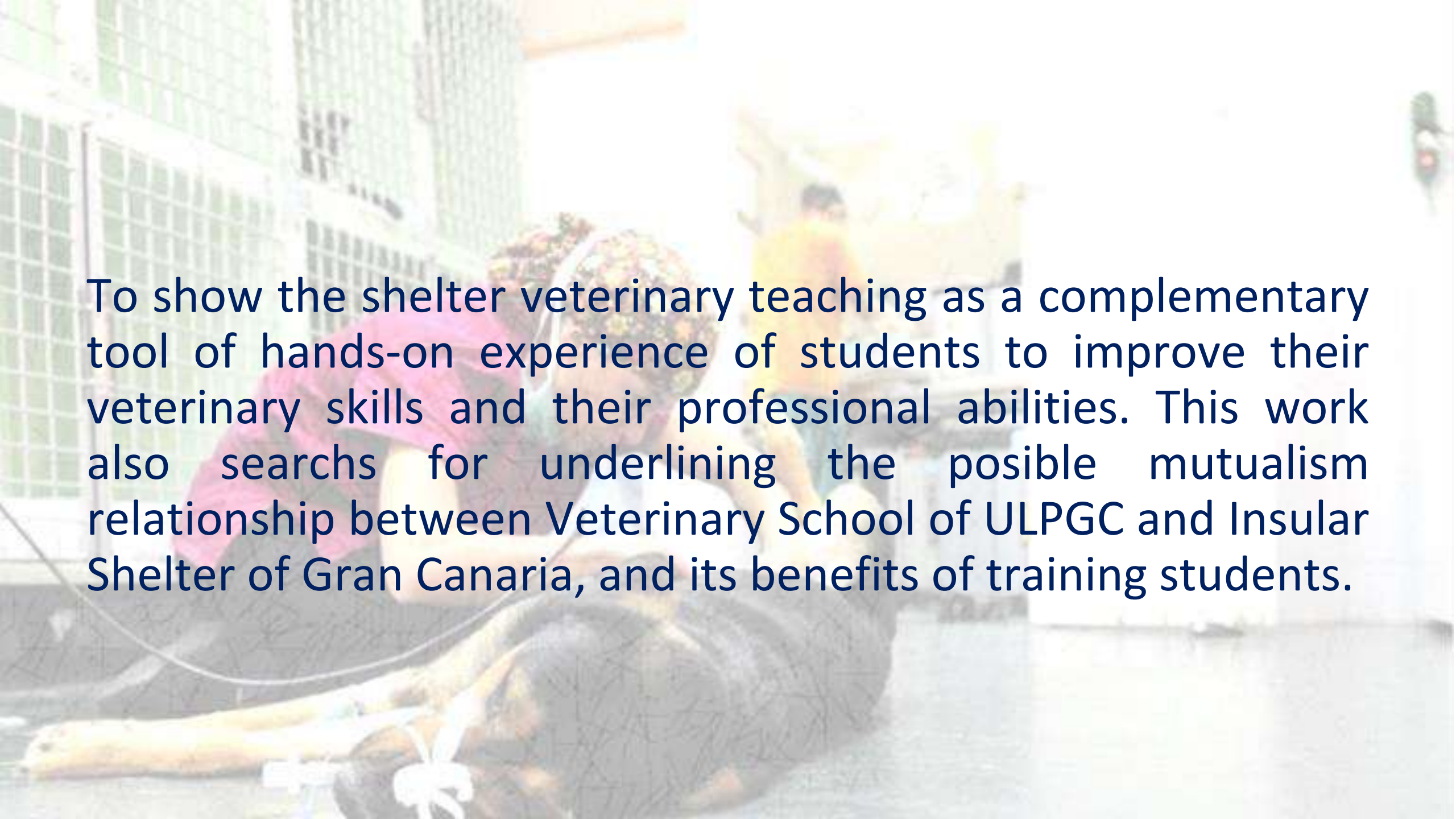


Albergue Insular
de Animales

Collaborative efforts between animal shelter and veterinary schools can provide crucial opportunities for teaching medical and surgical skills

A woman with her hair in a bun, wearing a black patterned top and blue jeans, is shown in profile from the waist up, holding a white dog with black spots. The dog is wearing a red collar with a tag. The background is a bright, overexposed outdoor setting with a white wall and a dark rectangular object. A blue-outlined box is centered over the image, containing the word "OBJECTIVE" in bold, dark blue, sans-serif capital letters.

OBJECTIVE

A student wearing a pink shirt and a face mask is leaning over a table, attending to a dog lying on it. The dog has a white bandage on its front leg. In the background, there are metal cages and another person in a yellow shirt. The scene is set in what appears to be a shelter or a veterinary clinic.

To show the shelter veterinary teaching as a complementary tool of hands-on experience of students to improve their veterinary skills and their professional abilities. This work also searches for underlining the posible mutualism relationship between Veterinary School of ULPGC and Insular Shelter of Gran Canaria, and its benefits of training students.

A close-up photograph of a person wearing a blue lab coat, holding a black pen and writing on a white clipboard. The person's hand is in the foreground, and the clipboard is held at an angle. The background is slightly blurred, showing more of the lab coat and some white papers. A semi-transparent blue box with a thin white border is overlaid on the center of the image, containing the text "CLINICAL CASES PRESENTATION" in bold, dark blue, uppercase letters.

CLINICAL CASES PRESENTATION



This work presents a case selection of patients with different clinical problems in a period of time from August in 2017 to May in 2018

All clinical cases that have been undertaken during this study were directly managed by the student and always supervised by trained shelter clinicians and where the strictest regulations on animal welfare have been followed

The training program of the student has been based on current protocols that they are subjected to continuous renewal

CARDIOLOGY	BEHAVIORAL CONCERNS	NEUROLOGY	ONCOLOGY
Pulmonary thromboembolism (1)	Stereotyping (3)	Hydrocephalus (1)	Mastocytoma (4)
Heartworm disease (Dirofilaria immitis) (+10)	Aggressiveness (+10)	Seizures (1)	
Hypertension (1)	Barbering (3)	Paralysis of the hind limb (1)	

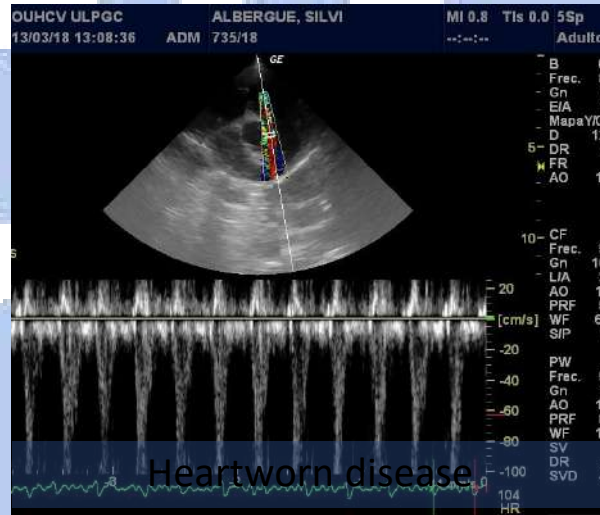
OPHTHALMOLOGY	INFECTIOUS DISEASE	TRAUMATOLOGY	DERMATOLOGY
Primary glaucoma (1)	Canine viral adenovirus(5)	Traumatic cord section (2)	Allergic dermatitis to flea bite (3)
Uveitis (2)	Canine papilloma virus (1)	Fractures (new and old)of forelimbs (4)	Dermatophytosis (+10)
Pteris bulbi (1)	Feline herpesvirus (+50)	Fractures (new and old) of lower limbs(1)	Pyoderma (2)
Crystalline prolapse (1)	Infectious canine tracheobronchitis (+50)	Hip dysplasia (2)	Wounds treatment (+20)
Third eyelid prolapse (3)	Feline Panleukopenia (5)	Hip dislocation (1)	Embedded collar (2)
	Canine parvovirus/coronavirus (+30)		Otitis (2)
	Felv(+30)		
	Filv(+30)		

SURGERY AND ANESTHESIA	GENERAL PRACTICE IN PATIENT MANAGEMENT
Monitor patients both manually and with equipment (+20)	Physical examinations (+100)
Correction of Palatoschisis (1)	Vaccination (+100)
Spay/neuter surgery (+50)	Deworming (+100)
-Cryptorchidism (1)	-Myiasis (3)
-Pvometra (4)	Microchip implantation (+20)
Rectal prolapse (4)	Drug administration (+100)
Dog ear hematoma (2)	Fluid therapy (+50)
Sialocele (1)	Venipuncture for blood screenings (+20)
To drain abscesses (2)	Place intravenous catheters (+20)
Tail amputation (1)	Care of new-borns (7)
	Grounds of euthanasia (5)
	Emergency care (5)

OUR CASES IN IMAGES



Pulmonary thromboembolism



Heartworm disease



Aggressiveness



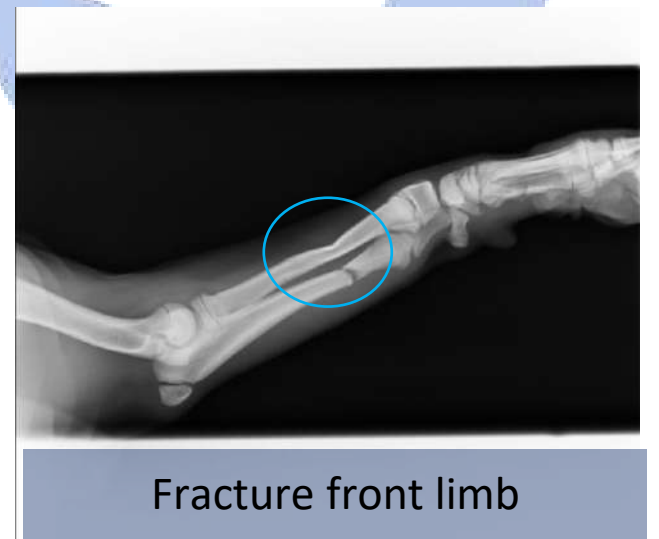
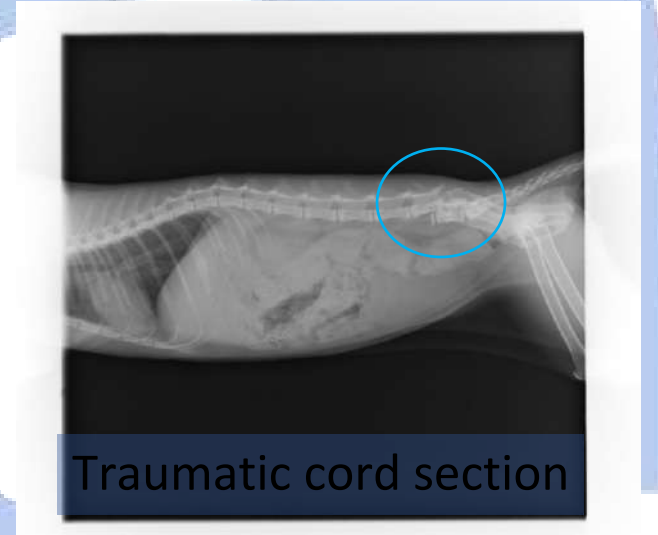
Barbering



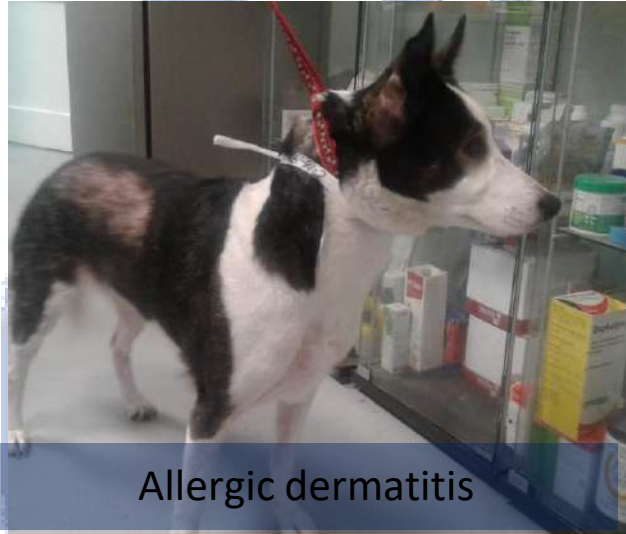
Care of new-borns



OUR CASES IN IMAGES



OUR CASES IN IMAGES



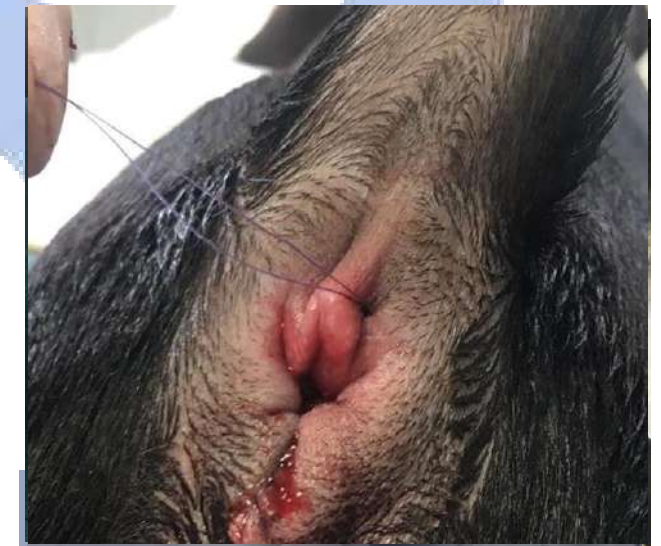
Allergic dermatitis



Cryptorchidism



Embedded collar



IN AVERAGE IN CLINICAL SERVICE

- 10 dogs per day in animal reception.....
- 3 cats per day in animal reception.....
- 5 medical meeting per day (83% dogs and 17% cats).....
- Treatment to 20 canine and 6 feline per day

Physical and behavioural examination, vaccination, deworming and identification.

Physical and behavioural examination, FeLV/FIV testing, vaccination, deworming, identification and, in some males spay/neuter surgery.

Vaccination, faecal and blood testing, deworming, identification with chip, filling out identification cards, registering for the zocan service and relationship with owners.

Recovery, stop treatment or eutanasia by humanitarian endpoint.

IN AVERAGE IN GENERAL SURGERY SERVICE

- 5 Dogs and 1 cats per day.....
- 95% spay/neuters and 5% others procedures

Physical examination skills, pre-surgical preparation, asepsis, anesthetic monitoring, post-surgical recovery...



A woman with her hair in a bun, wearing a black and white patterned shirt, is cleaning a dog's teeth. The dog is lying on a table, and the woman is using a white dental tool. The dog's mouth is open, showing its teeth. The scene is set in a veterinary clinic, with a metal cage visible in the background. The word "DISCUSSION" is overlaid in a blue box in the center of the image.

DISCUSSION

(Stone.EA, Conlon.P, Cox.S & Coe.JB, 2012)

The majority of experiential clinical learning occurs during the final year in the clinical rotations that take place in veterinary teaching hospitals. With the expert guidance faculty teachers, student learn problem-solving and case-management skills, integrating what they learned in the classroom into real-life situations





In our opinion and supported by Daniel Smeak work in 2008 Veterinary Teaching Hospitals supposes a difficult resource for undergraduates.



(Smeak.DD,2008)

The veterinary teaching hospitals have cases away from common clinical conditions. Diagnosis and treatment of complex specialty cases may insulate students from real-life veterinary experience and the training necessary to run successful, efficient practices.

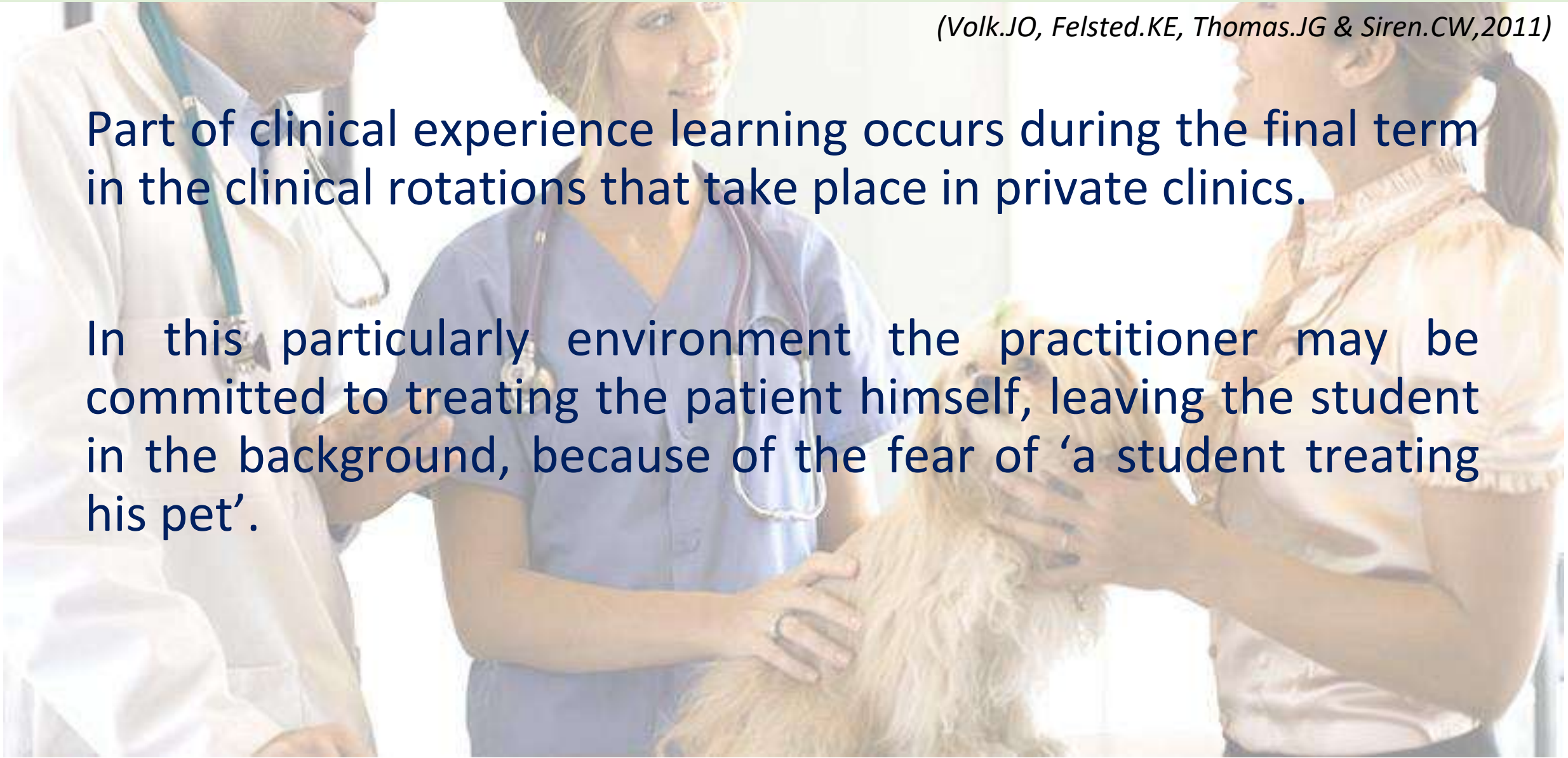
These trends negatively affect efforts to prepare students for entry-level veterinary practice, particularly in the area of technical skills.

JAVMA

(Volk.JO, Felsted.KE, Thomas.JG & Siren.CW,2011)

Part of clinical experience learning occurs during the final term in the clinical rotations that take place in private clinics.

In this particularly environment the practitioner may be committed to treating the patient himself, leaving the student in the background, because of the fear of 'a student treating his pet'.



New models are needed for primary health care education



St. George's University
THINK BEYOND



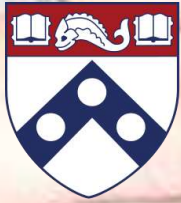
THE OHIO STATE
UNIVERSITY



Colorado
State
University

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

WASHINGTON STATE
UNIVERSITY



Penn
UNIVERSITY of PENNSYLVANIA



THE UNIVERSITY
of EDINBURGH



Our background in Spain is poor and our culture and collaborative programs are far behind from others countries.

To our knowledge there is not a proper teaching program in animal shelters in Spain and there is only a postgraduate collaboration in the University of Cordoba and Madrid

This experience is a **pioneer initiative** that could represent a new collaboration trend for a complementary source of training of our veterinary students

(Smeak.DD,2008)

Shelter rotations are useful for teaching technical and examination skills because the students can focus on learning skills without interference from owners.



4 WEEKS ROTATION

Medical service (2 weeks)

Surgical service (2 weeks)

- These data could mean that one student would be able to examine 620 animals per month on the internship in the shelter.
- 77% dogs cases and 23% cats cases.



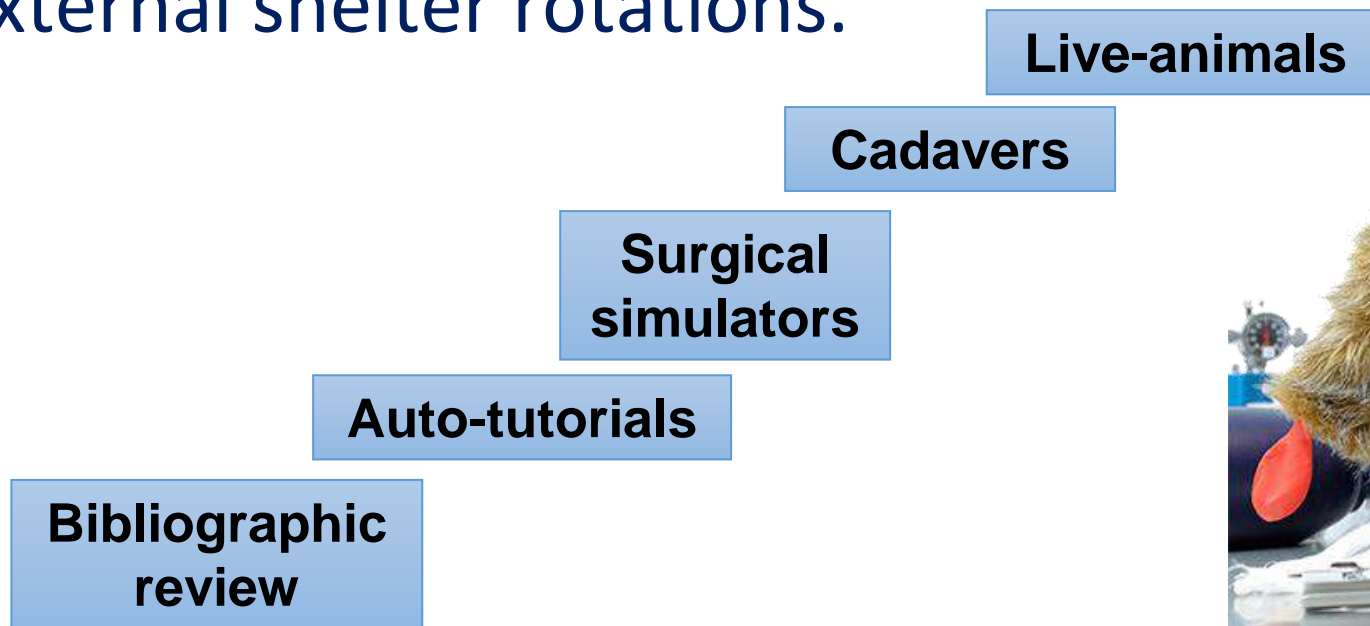
(Smeak.DD,2007)

The student could undertake a minimum of 30 ovariohysterectomy and 20 males castration.

This experience would provide a good source of hands-on skills on: gentle tissue handling, instrument and suture handling, hemostasis and ligation, and tissue retraction- rather than on the procedure itself.

“A previous training is needed for the success of the rotation”

One of the **goals** should be to increase preclinical year experience so that the student can hopefully perform surgeries more quickly and independently when they are on external shelter rotations.





(Williams.L, Nettifee-Osborne.J, & Johnson.J,2006)

Shelter provides important help to veterinary colleges.

- A source of cadavers for practices.
- Enough animals for a good student-patient.
- Scientific publications with a well-founded epidemiological base.
- A source of animals for blood transfusions in emergency cases.

(Smeak.DD,2008)

An important conflict necessary to address is euthanasia and animal welfare regulations.

It is especially important to establish an early dialogue with the student to understand the existence and necessity of euthanasia



This educational environment provided by the responsibility for all the patients in charge and under the close supervision of the shelter staff and teachers from Veterinary School of ULPGC, always available, it has contributed to create an atmosphere of motivation and to grow student **self-confidence**.

This experience prove that despite of lack of resources clinical and surgical treatment can be provided in an acceptable level.

A close-up photograph of a veterinarian in a white lab coat and blue gloves performing a procedure on a small, white, fluffy dog. The dog is lying on a blue surgical drape. The veterinarian is focused on the task, with their hands and the dog's head being the central focus. The background is slightly blurred, showing other people in white coats, suggesting a clinical setting.

CONCLUSIONS

1. This work presents an important empowering experience in the hands-on clinical and surgical skills. This experience has represented a very useful tool for training students for an entry-level veterinary practice and can provide the necessary management skills for graduate and postgraduate students.

2. The importance of mutualism relationship between Vet School of ULPGC-Insular Shelter of Gran Canaria to produce a veterinary well-trained entry-level would be supported by our own experience, which is based on what other authors and universities are already applying.

3. Collaborative relationship between Vet Schools and Shelter has a very poor background in Spain and this work means a pioneer initiative. And this initiative could indicate a future trend for others to follow.

4. This Shelter rotation requires a previous educational training in order to take a real advantage of this learning opportunity. Thus it should be included a planning and initial start-up, basic procedure protocols, and faculty time investment and a well-defined list of learning competences, but the benefits for the students in terms of exposure and hands-on learning makes this rewarding process well worth the effort.

5. A minimum of two weeks rotation on medical service and two weeks rotation on surgical service should be necessary in order to gain a proper level in clinical training.

Acknowledgments

A black and white cat is the central focus, looking through a wire mesh fence. The cat's face is partially obscured by the grid, and its eyes are looking towards the camera. The background is bright and slightly out of focus, showing other animals and the structure of the shelter.

I would like to thank The Insular Animal Shelter for approving this clinical rotation. A special mention to Syra Roiz Martin for her unconditional support, and to all of the rest of the shelter staff: Natacha Montesdeoca Niederhauser, Mario García Delgado, Teresa Perera Falcón, Belinda Déniz Armas, Marta Romero Miranda and Oihane Atxaga Eskisabel.

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THANK YOU