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Minimum Competence Required by Different Stakeholders from Entry Level Veterinarians

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A B S T R A C T

The study was conducted to enlist the minimum day one competencies required in the freshly graduated veterinary students under the project "Exploring the gaps in veterinary education in India to match the graduate skills with stakeholders level" funded by Education Division, ICAR, New Delhi. Meetings were conducted with clinical, para-clinical and animal science experts from College of Veterinary Science, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana to compile the list of competencies required at day one of veterinary graduation. The discipline wise competencies so collected were then sent to other expert of the same discipline to prioritize the competencies. Likewise public and private sector veterinarians were also requested to give the list of competencies they thought were required in veterinarian at day one of graduation. Focus group discussions were also conducted with various livestock farmers to know about their expectation from the newly graduated veterinarians. Data so collected revealed that a freshly graduated veterinarian must be well equipped with more than one hundred competencies. Public sector veterinarians highlighted 20 skills for which the entry level veterinarians are least prepared. Further they revealed 24non-technical skills which are required to be a successful veterinarian. Private sector veterinarians revealed 14 skills which they thought are essential for success in private sector. Farmers demanded specialized doctor for each species with skills of diseases diagnosis, treatment and knowledge of local language. Study concluded that veterinary curriculum as well as education still have certain bottlenecks which need to be removed to make the freshly graduate competent enough to match the stakeholders expectations

Introduction

Livestock sector is playing an important role in alleviating poverty and malnutrition especially in the developing countries. It is expected that current trend in livestock production coupled with population growth and change in peoples' dietary pattern will lead to 2-3 times more demand of livestock products in the times ahead. World Scenario is

rapidly changing due to market globalization and so does the role of veterinarian**.** Veterinarians play a vital role in safe-guarding both human and animal health, by securing an adequate supply of safe food along with protecting humans and animals from the threat of zoonotic diseases at the field level. They are the most vital to improve the productivity of livestock for the benefit of wider population in general and livestock producers in particular. So, having more efficient veterinarian will make our food system safer and secure which will be a step toward healthy society. The present veterinary education curriculum in India somehow lacks the punch which can enable the outgoing veterinarian competent enough to handle all these aspects. So there is dire need to develop outcome based curriculum. Keeping this in view, the present study was thus planned with the following objective"To identify the minimum skills required by veterinary students at the time of graduation to cater the need of stakeholders".

Materials and Methods

In this study academician, veterinary officers in public and private sector and different livestock farmers were contacted to identify the skills that a freshly graduated veterinarian must possess.

Academicians (Subject matter experts)

In first step, meetings were conducted with clinical, para-clinical and animal science experts from College of Veterinary Science, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana. In these meetings experts were sensitized and briefed about the objective of the study and were asked to prepare a list of minimum skills that are required in day one veterinary graduates. After stipulated time, list of minimum skills was collected from respective expert(s). This list of minimum skills from each department was then again sent to other expert(s) of same discipline for prioritization (ranking) of enlisted skills-

Veterinarians

Two separate groups were contacted for survey. One was field veterinarians working under State Animal Husbandry Department (public sector) and second one was veterinarians working in private sector.

Public sector veterinarians' survey

This survey was conducted on veterinarians selected randomly from all over the Punjab state to find what technical and non-technical skills were required for the entry level veterinarians. The data base of field veterinarians of Punjab is available on State Veterinary Council website. For this survey a questionnaire was prepared and was sent to 110 veterinarians through email and WhatsApp. Questionnaire comprised of following three questions

What are the 10 procedures or skills do you think the new/entry level field veterinarians must possess while starting the job?

What are the 5 procedures of skills for which veterinarians entering the field service are least prepared for?

What are the 5 non technical competencies which are required for field job to become successful practitioner?

A total of 87 veterinarians out of 110 working in Animal Husbandry Department responded which implies a total response rate of 79%.

Private sector veterinarian's survey

The interactions with veterinarians working in the Private Sectors were conducted to enlist the skills that are essential for a veterinarian to work in private sector.

A total of 14 veterinarians working in private sectors/companies were contacted and interviewed to have the first hand information on what they perceive regarding skills, a newly graduate must possess.

The list of 14 private sector companies/industries is with the author and these companies are dealing with milk processing, cooperative, animal feed, pharmaceuticals, and meat processing.

Livestock farmers

Livestock Farmers are one of the major stakeholders in the livestock sector. Different livestock farmers viz. Dairy farmers, Pig farmers, Goat farmers were contacted to have their expectation from a freshly graduated veterinarian.

Statistical analysis

Data so collected was compiled and analysed to identify minimum number of competencies required in day one of veterinary Graduation. Number, ranking and percentage were used to draw inference for the study.

Results and Discussion

Academicians (Subject matter experts)

Discipline wise prioritized list of minimum skills required in day one graduate is as under:

Animal science subjects

Department of Animal Breeding and Genetics

Dairy

Animal Handling.

Breed identification with reference to production potential.

Breeding act and policies of Govt.

Species wise animal genetic resources and their importance.

Semen resources of Nation, state and University.

Selection/judging of animals for various categories including Body Condition Scoring and lameness rating.

Poultry

Per capita egg and meat availability in State and Nation.

Vaccination Schedule for poultry birds

Day to day schedule followed in poultry farm

Feeding of birds at different stages

Commonly used preventive medications such as antibiotics, coccidiostats and stress alleviators in poultry and their potential effect on birds as well as Human.

Economics of poultry farming

Minimum flock strength for starting a broiler farm or layer farm

Knowledge of important farm production parameters
Performance indicator traits of broiler and layer breeds.

Seasonal management of flock.

Knowledge regarding different commercial 3-way and 4-way crosses available in the market?

Broiler and layer varieties available in the university, State and at National level.

Cost of broiler and layer day old chicks available commercially.

Nutritive value of different category of poultry.

Nutritive value of different eggs of poultry birds such as white shelled and brown shelled eggs.

Difference between quail, turkey and poultry meat and eggs?

How to develop inbred lines from base population for maximum utilization of heterosis in a cross (produced by crossing of inbred lines)?

Department of Animal Nutrition

Least cost ration formulation.
Feeding of calves and heifers.
Animal feed technologies
Mineral mixture feeding
Area specific mineral mixture
Urea treatment of wheat straw
Uromin Lick
Bypass fat
Bypass protein
Feed additives
Silage and hay making
Nutrient requirements of dairy animals
Clinical nutrition

Department of Livestock Production and Management

Sound knowledge of Handling and Restraining of different species of livestock.

Knowledge of casting of different species of livestock.

Ageing and dentition of various livestock species.

Selection and judging of various livestock species.

Various management strategies for different categories of livestock (Disbudding, Identification marking methods:

Tagging, tattooing etc. Milking protocol for Clean Milk Production (CMP) Breed Identification, hoof trimming, shearing, clipping, naval disinfection, needle teeth cutting).

Weaning methods and fostering practices

Housing and lay-out preparation for various livestock species.

Record keeping at livestock farms.

Body condition scoring.

Waste handling and management: Composting Pit, Bio-gas plant etc.

Fodder production and utilization strategies.

Project preparation for starting of livestock farms.

Animal behavior and welfare.

Climate – Human – Animal interaction and management of climatic externalities.

Department of Veterinary Extension Education

Full knowledge of local terminology used by livestock farmers.

Communication Skills with farmers: Affability and empathic

Role of extension and how to arrange

extension activities at village level.

Knowledge of Information source for farmers.

Knowledge of display material and their characteristics.

Indigenous Technologies and Information Communication Technologies tools.

Department of Veterinary Physiology and Biochemistry

Collection of blood sample, separation of serum and plasma

Complete haematology (Hb, PCV, ESR, TLC, TEC, DLC, Platelet count)

Recording of BP and ECG

Urine analysis (physiological and pathological)

Rumen Liquor analysis (Physical characteristics, TVFA, NH_3-N_2, total nitrogen protozoal count, bacterial count, differential protozoal count)

Semen evaluation (sperm motility, total sperm count, live and dead count, abnormal sperm count)

Growth measurement and normal health parameters (Respiration rate, Heart rate and pulse rate)

Clinical Subjects

Department of Veterinary Gynaecology and Obstetrics

Pregnancy diagnosis in different species.

Artificial Insemination Technique.

Handling of dystocia including fetotomy.

Diagnosis and treatment of uterine torsion

Caesarian section

Treatment of Retention of Placenta (ROP)

Handling of prolapse including Buhner's suturing

Intrauterine medications

Preliminary examination of Semen

Diagnosis and treatment of anestrous/repeat breeding

Microscopic examination of cervical Mucus

Epidural anesthesia

Management of mismating in bitch

Knowledge of Hormones and their use in fertility management

Knowledge of advance reproductive techniques: synchronizations, sexed semen, ETT etc.

Department of Veterinary Surgery and Radiology

First aid in surgical wounds.
U-splint/POP bandaging.
Radiographic interpretation.
Local anesthesia and nerve blocks.
Disbudding/dehorning.
Castrations
Abscess/hygroma management.
Hoof trimming.
Upward fixation of patella.
General anesthesia.
Rumenotomy.
Tooth rasping.

Tail amputations.
Umbilical hernia.
Spaying.
Lacerations/eviscerations.
Euthanasia.

Department of Veterinary Medicine

Restrain of Animals

IV/IM/SC Injections

Collection of Rumen Liquor, Urine, Blood, Milk samples

Physical Examination – Auscultation, Body score, temperature, respiration, heart rate, skin, eye and ear examination.

Deworming and vaccination schedule.

Interpretation of biochemistry, hematology, parasitology, x-ray, ultrasound reports.

Nasal intubation.

Prevalent animal diseases (infectious/non infectious/toxicities) –

Clinical signs, postmortem, diagnosis, treatment and control.

Therapeutics/blood transfusion.

Herd health

Lameness.

Para clinical subjects

Department of veterinary parasitology

Knowledge of important clinical signs of various economically important endoparasitic and ectoparasitic diseases of domesticated livestock and pet animals.

Knowledge of collection and/or transport of various excretions/secretions (blood, faeces, skin scrapings, urine, etc) from the livestock and pet animals

Knowledge of control strategies employed for prevention and control of various economically important endoparasitic and ectoparasitic diseases of domesticated livestock and pet animals

Knowledge of important morphological features of various eggs/cysts/ova of various helminths and protozoa, stages found in blood in case of haemoprotozoan parasites and ectoparasites (ticks, mites, flies etc) affecting domesticated livestock and pet animals

Knowledge of processing of these samples (blood, faeces, skin scrapings, urine, etc) for laboratory diagnosis of various economically important endoparasitic and ectoparasitic diseases of domesticated livestock and pet animals

Department of Public Health and Zoonosis

Knowledge of zoonotic diseases and their transmission.

Food safety: acts and rules

Pesticide/chemical residue and their impact on ecohealth

Water quality
Biomedical waste disposal

Department of Veterinary Microbiology

Aseptic collection of samples for microbiological diagnosis (Live animals and dead animals both).

Knowledge of site and type of sample depending on the area affected or history of the animal.

Transportation of samples.

Diagnostic tests for commonly occurring diseases like TB, JD, Glanders and Brucellosis

Department of Veterinary Pharmacology and Toxicology

Handing of toxicological material (collection, preservation and dispatch).

Test for diagnosis of toxicities of common poisoning cases.

Toxicities/side effects of commonly used veterinary drugs.

Drug interaction between commonly used veterinary drugs.

Knowledge of some Indigenous preparation(s).

Department of Veterinary Pathology

Handling of outbreak

Vetero-legal aspects of conducting post-mortem

Systematic conduct of Post-Mortem of different species of animals.

Identification of organs in situ during post-mortem.

Correct sampling for microbiology, toxicology and histopathological purpose

Preservation and dispatch of blood samples / Tissue samples for Histopathology. If needed, can be done from live animal

Department of Veterinary Anatomy

Anatomical location of arteries for recording of pulse in different animals and recording respiration.

Anatomical locations of arteries and veins for injection, collecting arterial and venous blood in different animals, superficial or palpable lymph nodes in animals.

Topographic anatomy of different body cavities and organs present in them. Anatomical location of uterus and ovary of domestic animals (per rectal examination for heat detection, AI and PD) with Anatomical landmark of middle uterine artery.

Anatomical landmarks for medial patellar desmotomy and surface anatomy of flank region (CS, Rumentomy, ruminal motility).

Anatomical landmarks for important nerve blocks. Anatomy of scrotal area in relation to castration, anatomy of hoof in relation to laminitis and shoeing. Anatomy of Udder and teat in relation to mastitis and intramammary medication.

Ear anatomy (Zepp's procedure) and radiographic anatomies

Veterinarians

Public sector veterinarians survey

A total of 19 skills were listed by the field veterinarians that an entry level veterinarian must possess to become a successful field veterinarian. They highlighted 20 skills for which the entry level veterinarians are least prepared or which are lacking in them. Further they revealed 24non- technical skills which are required to be a successful veterinarian.

Private sector veterinarians' survey

Veterinarians in private sector enlisted total 14 skills (technical and Non-technical) which are

essential for private sector (Table 4).

Livestock Farmers

Two Focus Group Discussions were conducted with dairy farmers (n- 62) to extract the skills they think a day one graduate must possess. Following skills are needed in a veterinarian from dairy farmer's angle:

Pregnancy diagnosis.

Proper diagnosis of disease.

Artificial Insemination.

Should be able to do caesarian at field level.

Recognition of breeds and their age.

Communication skills.

Proper knowledge of medicines and their side effects.

Two Focus Group Discussions with Pig Farmers (n- 53) were conducted and skills required mentioned by them are as under:

Should be practical and have some field's experience.

Able to handle all type of infectious and seasonal diseases

Must have good extension skills.
Should have technical knowledge of pig rearing feeding and management.

Should able to guide farmers how to increase productivity in pigs.

Must have knowledge of latest schemes and policies.

Need specialized doctors for pig

Well versed with local language.

Skill for minor surgeries in fields.

Proper knowledge of dose of medicine.

They should help in entrepreneurship development in feed-formulation and supply, establishing pig breeding units, pork processing and use of pork by product.

The Goat Farmers (n -41) were also contacted and they mentioned the following skills needed by day one graduates:

Need specialized doctor for goats having more practical exposure of goats.

Local language knowledge especially of goat is must.

Proper knowledge of medicines and their use.
Proper disease diagnosis.
Minor operations at field level in goat.

Farmers perception on skills required in veterinarian (Technical)

Beside, farmers (n-50) were purposively and randomly surveyed during Pashu Palan Mela (Livestock fair) of university for acquiring their perception from entry level veterinarian. Following technical skills were reported essential from farmers' point of view (Table 5). Most of the farmers emphasized that a newly passed out veterinarian should be able to perform an accurate pregnancy diagnosis (75%) followed by prescribing medicines and recommending vaccination schedule (72.5%), proper AI (67.5%), disease diagnosis (65%), knowledge regarding breeds (47.5%) and should be able to perform minor surgeries (20%).

Table.1 Rank wise list of Skills which a newly recruited veterinarian must possess

Rank.	Skills	Number of Veterinarians	Frequency (%)
1	Veterinary Medicine Knowledge/Clinical Examination and Administration procedure of medicines	59	67.82
2	Pregnancy Diagnosis and Handling of other Gynaecological and Obstetrical Cases	58	66.67
3	Minor surgical operation/procedures	50	57.47
4	Artificial Insemination	49	56.32
5	Lab. Diagnostic Ability with interpretations	44	50.57
6	Anesthesia	31	35.63
7	Extension Work with Animal Health Management /knowledge of local breeds	28	32.18
8	Balanced Ration Formulation / Nutrition	25	28.74
9	Medial Patellar Desmotomy / String Halt	24	27.59
10	X-ray/Ultrasound interpretation	19	21.84
11	Post-mortem Conduction / Toxicological knowledge with interpretation	17	19.54
12	Internal and External Immobilisation	15	17.24
13	Knowledge about Anatomy and Vetero-legal Aspects	15	17.24
14	Sterilization/Asepsis	13	14.94
15	Abdominal surgical operations/orthropaedics	12	13.79
16	Animal Dentition	10	11.49
17	Knowledge of zoonotic diseases and animal welfare	9	10.34
18	Ovario Hysterectomy(OH)	4	4.59
19	Milk Testing and Adulteration Techniques	2	2.29

Table.2 Rank wise List of Skills for which newly recruited veterinarians are least prepared

Rank	Skills	Number of Veterinarians	Frequency (%)
1	P. D. with other Gynaecological and Obstetrics cases	51	58.62
2	A. I.	37	42.53
3	Medial Patellar Desmotomy with other Minor surgical Operations / Procedures / Orthopaedics	34	39.08
4	Diagnostic Ability / Lab. Diagnostic Techniques	23	26.43
5	Emergency Breakouts / dis. Prevention/ outbreaks/ disaster management	18	20.69
6	Regional abdominal surgeries. Rumentomy/Intestinal	17	19.54
7	Veterinary Medicine Knowledge/Clinical Examination and Administration procedure of medicines	16	18.39
8	Vetro legal cases handling	14	16.09
9	Feed Formulation / Animal Nutrition	10	11.49
10	Different types of Anaesthesia	10	11.49
11	Post-Mortem	8	9.19
12	Restraining of Animals (Controlling Animals)	7	8.04
13	Radiography / Ultrasonographic Imaging Interpretation/ Endoscopy	7	8.04
14	Vaccination and preventing measure adoption	7	8.04
15	Ethics of Veterinary Practice	5	5.74
16	Management of Teat Affections	4	4.60
17	Equine handling and treatment	3	3.44
18	Congenital Anomalies	3	3.44
19	Treatment of Non-domestic Animals	3	3.44
20	Knowledge about Asepsis and Sterilization Techniques	2	2.30

Table.3 Rank wise list of non-technical skills required in outgoing veterinarian

Rank	Non technical Skills	Number of Veterinarians	Frequency (%)
1.	Communication (Interactive) skills	53	60.92
2.	Local Language (Use of Vernacular terms)and terminology	40	45.98
3.	Good behaviour (politeness)/Patience/ Affability	36	41.38
4.	Record Keeping at hospital level	29	33.33
5.	Motivational, Convincing and Leadership skill	26	29.89
6.	Good Extension Worker	25	28.74
7.	100% availability/Sincerity	17	19.54
8.	Staff Management	15	17.24
9.	Economical Treatment/Affordability	15	17.24
10.	Punctuality	15	17.24
11.	Good Manager/Office/Hospital Administrator	13	14.94
12.	Empathy	12	13.79
13.	Latest Scientific Techniques	10	11.49
14.	Social / Good event organisation skill	9	10.34
15.	Job Satisfaction (Passion for Job)	8	9.19
16.	Affection and Enthusiasm for treatment and handling of Animals	7	8.04
17.	Computer Skills	7	8.04
18.	Good Listener	7	8.04
19.	Departmental Rules and Regulations	5	5.74
20.	Ability to understand problems regarding Animal Husbandry	4	4.60
21.	Satisfaction of owner	4	4.60
22.	Desire for Constant Learning	3	3.44
23.	Employability (must promote livestock farming as an employment opportunities)	2	2.30
24.	Stress Management Skill	2	2.30

Table.4 Rank wise skills enlisted by private sector veterinarians

Rank	Skills	Number of Veterinarians	Frequency (%)
1	Communication Skills	10	71.93
2	Marketing Ability	9	64.3
3	Animal Feeding Skills	8	57.14
4	Local Language Knowledge	7	50.0
5	Animal Health Care/Herd Health	7	50.0
6	Good Pharmacology Knowledge (Knowledge about drugs)	7	50.0
7	Computer Literacy	5	35.7
8	Field Experience	5	35.7
9	Leadership Ability	5	35.7
10	Extension Skills	4	28.6
11	Different Lab. Tests	4	28.6
12	Record Keeping	4	28.6
13	Punctuality, Empathy, Patience	3	21.42
14	Other Skills from Meat industry perspective viz. Understanding of Meat cutting, freezing, offalsand their preparation and deboning method etc.	1	7.14

Table.5 Farmers perception on skills required in outgoing veterinarians at day one of graduation

S No	Skills	Frequency (%)
1	Pregnancy diagnosis	75.0
2	Treatment/Vaccines knowledge	72.5
3	Artificial Insemination (AI)	67.5
4	Diseases diagnosis	65.0
5	Breed information/management/programme	47.5
6	Ration formulation	32.5
7	Minor operations	20.0

Around 130 skills were enlisted by academicians which a freshly graduated veterinarian must know. There are few topics which need to be taken care of in the present context. Restraining of animals, minor surgical procedure, upward fixation of patella, anaesthesia radiographic interpretations etc. are enlisted to be essential skills at day one of graduation but were reported to be deficient in newly graduated veterinarians by the field veterinarians in present study as well as of America in a study conducted by Morin *et al.*, (2003). Livestock farmers consider veterinarians to be most important for making diagnoses and administering treatments (Gehrke 1995) and these veterinarians are mostly involved in herd health, vaccination programs and emergency care. Dawn *et al.*, (2002) conducted a survey on "Individual animal medicine and animal production skills expected of entry level veterinarian in bovine practice" and reported the sixteen individual animal medicine skills which should be emphasized in veterinary school to make the entry level veterinarian more efficient. Pregnancy detection by palpation per rectum was one of the procedure used by the majority of veterinarians more than once each week (Morin *et al.*,2003) and in present study also, it was reported as second most essential skills by field veterinarians but it was quoted as first skills with which entry level veterinarians are least prepared (Table 2). Animal Nutrition ought to be an important subject in the success of any livestock enterprise and entry level veterinarian must possess the skill of balanced ration formulation, said the academicians, field veterinarian of both public(28.74%) and private sector (57.14) as well as livestock farmers in this study. Singh *et al.*, (2017) indicated that field veterinarian of animal husbandry department, Punjab have medium level of knowledge on various applied animal nutrition aspects and stressed upon the need to train the field vets in the field of applied animal nutrition. Dawn *et al.*, (2002) also reported the general nutrition skill as one of the vital skills for the entry level veterinarian. Iveta *et al.*, (2016) revealed that skills and competencies of the new veterinary graduates in animal nutrition are not fully satisfactory and stressed upon on education for improving nutrition competencies of veterinary practitioners. Fodder, the most important and inseparable aspect of livestock farming, has become a step subject between veterinary and agricultural university, consequently ignored during veterinary graduation programme. In the modern, fast-paced, highly technical and competitive era, veterinary profession demand efficiency in non-technical skills to handle the awakened, educated, emotionally bonded clients. Non-technical competence has been defined as ''the habitual and judicious use of communication, knowledge, technical skill, evidence-based decision making, emotion, values and reflection to improve the health of the individual, the patient, and the community (Epstein and Hundert, 2002). In present study 24 non-technical skills are enlisted by public sector veterinarians (Table 4). Few of these non-technical skills were also enlisted by private

sector veterinarians, farmers and experts. Veterinary educators had long presumed that students would somehow acquire non-technical (professional) competence as they struggled to complete the technical aspects of the curriculum (Gilbert *et al.,* 2006). However abundant evidence suggests that non-technical competence can, in fact, be taught, or at least enhanced, and that performance actually suffers in the absence of these skills (Power *et al.,* 1989, Piper *et al.,* 1993). Non-technical training will enhance the professional quality, marketability, acumen and success potential of our future doctors of veterinary medicine (Gilbert *et al.,* 2006). Nimmanapalli and Donapaty (2016) emphasized that college should impart skillsets training, ideology, self-confidence and to audacity to seek greater role in society. In present study livestock farmers demanded species specialized veterinary doctor. However, veterinary colleges do not have curriculum to engage in "species specialization"; that is, students must be expert in veterinary medicine covering a wide range of species rather than just one or two (such as dogs, cows,) (Karg, 2000). But various reasons like absence of sufficient cases in clinic, more number of students per batch, lack of innovative teaching methods, fewer faculty members in the departments/disciplines, over burdening of faculty members etc results in lower knowledge to the undergraduate students. Veterinarians will remain the most qualified individuals to diagnose and treat disease in cattle, goat, pig and other species as well as to aware the farmers about the scientific practices and preventive measures. Veterinarians have to play a greater and crucial role in public safety in terms of production and certifying wholesome food and reducing the zoonotic diseases at field, state, national and international level. Food safety is one of the important topics which directly relates to changing role of veterinary to promote healthy and safe food. In the present veterinary curriculum food safety is covered under Public health discipline. Andrés Cartín-Rojas (2013) also advocated the inclusion of food safety issue in veterinary curriculum to improve food quality and trade. Various aspects like client simulation, client animal bonding, animal welfare, empathy, communication skills are stressed to be included in veterinary curriculum across the world, besides focusing on clinical diagnostic and practical skills. All involved in education must be clear that our task is to develop the independent professional person. Such a person is much moreskilful than the possessor of a collection of facts and a set of individual competences. In the light of above we suggest certain points to be included in curriculumor emphasized if already exists to make our vets future ready

Compensate non-technical skills like affability, empathy, communication skills in vernacular language, clientele management, Vet-clientele interaction, earning client trust, client compliance, client satisfaction, managerial behaviour etc. The extension subject in present curriculum should be reframed to include these topics along with more practical approach.

Make future vets more aware about food safety, food animal husbandry, planetary health including public, animals, soil, water and environment health.

Applied topics like fodder, animal feeding, ration formulation (manually or through software), animal management, adulteration testing should be kept in final year. In the present curriculum they are taught in initial years, so a capsule course can be framed to be included in the final year for freshening.

Rigorous rotational training in private industry/commercial farms should be ensured for root level understanding for the functioning of the same.

Education curriculum should be open to accommodate changes in the contemporary role of veterinarians in society.

Interactive learning in class room should be promoted to inculcate the knowledge rather than passive and one way learning. It is pertinent to mention here that VCI formulate Minimum

Standard of Veterinary Education (MSVE). It never restricts any institute/college to add another course/topic as per area/region/ locality/society need. The current VCI, MSVE regulation, 2016 attempted well to widen the aura of veterinary profession by including many new topics in curriculum. But need, opportunities, situation are dynamic in nature, so, periodical curriculum reforms is inevitable.

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