

Skill development in Veterinary Education



Skill development is not merely meant for farmers and entrepreneurs. It is also about having the needed skills among field practitioners. For instance, the main purpose of veterinary education is development of appropriate knowledge, skills and attitudes among veterinarians. But are we doing enough to develop the much needed skills required for field veterinarians? Lack of clarity on the different types of skills to be developed and absence of adequate infrastructure for skill development have led to poor skill development among veterinarians and this needs to change, argues Dr S V N Rao.

A field veterinarian is expected to play two roles one as a clinician and the other as a livestock advisor. For a veterinarian both hard and soft skills are equally important. For instance, he/she must be a good clinician (hard skill) but also be good in interpretation of results for proper diagnosis (soft skill). Hard skills could be defined as well as measured and hence considered as tangible, whereas, the soft skills are intangible and difficult to quantify. It is comparatively easy to impart hard skills which are mostly physical in nature. The soft skills are to do with mind.



Skills such as Artificial Insemination (AI), surgical interventions, treatment of cases, analysis of samples etc are examples of hard skills. The examples for soft skills include, approaches on personality development, interpersonal communication (Interaction with clients, collecting history of the animal from the clients, building rapport with the clients etc), interpretations and diagnosis of cases, prescription, entrepreneurial skills etc. He/she also needs to be a good livestock advisor which involves mostly soft skills, necessary for effective delivery of livestock services. This is one of the reasons why very good clinicians with poor communication skills or poor personality often fail to attract the clients and also fails to develop rapport with livestock owners.

Box 1: Knowledge and Skill

Education is defined as the process of bringing about desirable behavioral changes in people. These changes could be in the areas of Knowledge, Skill, Attitude and Action (in short KASA changes). Knowledge is a body of information applied directly to the performance of an act. When once we use this knowledge for performing an act it becomes skill. Knowledge is information that we have in our head and skill is the ability to use and apply this knowledge to perform certain tasks. Knowledge refers to theoretical information acquired on any particular subject whereas; skill refers to the practical application of that knowledge.

Knowledge can be learnt whereas skills require practical exposure. Certain skills could be imparted through training in practical situations whereas, certain other skills could be inborn and difficult to impart through training. It is said that Skill gives teeth to the knowledge. Both knowledge and skill are required to perform an activity successfully.

Knowledge normally precedes the skill. A person must be definitely knowledgeable. Any skill must be acquired properly up to the required depth. Partial acquisition leads to poor application and it is often compared to a blunt knife. Individual variation exists among the trainees although the trainer and the situation in which the training was given are the same. If skill is not practiced regularly one may lose its touch. One may not forget it entirely but the fineness with which he does or applies varies. Practice makes a man perfect in that skill.

The skills could be placed on a continuum of very simple to very complex.



AI – Artificial Insemination, PD – Pregnancy Diagnosis, I/M – intra muscular, S/C- Sub cutaneous
I/V – Intra venous

Imparting Skills

Skills required for a veterinarian as a clinician

To acquire skill one has to learn certain things in a systematic manner. For instance, the veterinarian has to “diagnose and treat a case” successfully. This necessitates him to:

- Collect the history of the case from the owner
- Examine the animal for various clues which help in arriving at a tentative diagnosis
- Collect the required samples from sick animal (blood, skin scrappings, dung, etc.
- Obtain the required information through various diagnostic tools
- Combine all this with the help of his past experience to arrive at a diagnosis.
- Treat the case accordingly.

This means the veterinarian must have the following knowledge, skills and attitude:

- Skill to build rapport with client to collect proper history (soft skill)
- Knowledge of the symptoms of a disease
- Skill to look for the symptoms in the animal (soft skill)
- Skill in interpreting the results of clinical diagnostic tests (soft skill)
- Knowledge on various lines of treatment with degrees of success
- Knowledge on the prognosis of the case and cost of treatment
- Skill in arriving at an appropriate diagnosis (soft skill)
- Skill in administering the medicines or injections (hard skill)
- Skill in dealing with the clients (soft skill)
- Attitude towards the case as well as towards the client

Similarly to impart skills on “pregnancy diagnosis in cows” we need

- Trainer (Gynaecologist)
- Sufficient number of cows with varying gestation periods
- Interested trainees
- Appropriate place (dairy farm)
- Other things like trevis, gloves etc.

Cases which require surgical interventions need different types of equipments and in the absence of which the surgeon is constrained to treat the cases effectively. As the saying goes “Practice makes a man perfect” we need to expose the students to a number of cases to enable them to get sufficient exposure to help them acquire the skills to a required depth. The teachers will be using different methods singly or in combination to impart skills.

- Method demonstrations by the trainer
- Practicing on dummy animals (for complex skills)
- Hands on training *in situ*
- Providing enough opportunities to enable the trainees to acquire skills in a farm/hospital and later in farmers’ field.



Knowledge is also sometimes construed as theoretical knowledge different than practical knowledge which is sometimes referred to as skill (applied knowledge). Knowledge could normally be imparted in a class room setting through training programme.

To train UG students on AI technique the following activities must be undertaken:

- Knowledge of heat symptoms & stages of heat (theoretical in class room)
- Skill in identifying the cow in heat (soft skill in ILFC/ TVCC)
- Skill in examining the genitalia per rectum (hard skill in TVCC)
- Skill in determining the stage of heat (hard skill in TVCC)
- Loading the AI gun (hard skill in TVCC)
- Inseminating the cow (hard skill in TVCC)

Once the students are confident in performing AI in TVCC they can be permitted to practice in ILFC and the field (farmers' animals).

As it could be noticed that to impart AI skill, we need infrastructure in terms of cows (both dummy/ condemned cows and healthy cows), AI equipment, Semen straws, LN₂ containers etc in sufficient numbers to provide enough opportunities for the trainees to acquire the skills. For this reason the Veterinary Council of India (VCI) insists on Instructional Livestock Farm complex (ILFC) with different species of animals to help students to acquire both knowledge and skills in rearing animals through “earn while you learn” projects and Teaching Veterinary Clinical Complex (TVCC) which receive quite a good number of cases.

Skills required by a Veterinarian as livestock advisor

If we wish to impart skills in organizing a “deworming campaign” we need

- Extension professionals
- Students
- Development and use of communication aids such as specimens, charts, posters etc.
- Organization of various materials like microscopes, slides, deworming medicines etc.

- Coordination of various departments like Parasitology, Clinical medicine, State Dept. of AH
- Appropriate location in the village(s) – open area to hold animals, place to keep microscopes, suitable place for exhibiting the specimens, posters, charts etc.
- Logistics like transport, drinking water etc.



This involves meticulous planning of both men and material resources. The dairy farmers need to be sensitized for getting their animals dewormed, involve village leaders in site selection and local publicity, seek coordination of various departments, arrange for dung examination, administration of medicines, record keeping etc. All these activities must be done by the students while the extension faculty plays the role of facilitator. Excepting collection and examination of dung samples, restraining the animals and administration of dewormers, rest of the activities involve only soft skills. These soft skills include:

- communication skills to build rapport with the village leaders and cattle owners,
- organization skills to arrange for the materials at appropriate places,
- skills to achieve coordination of various departments,
- skills to resolve the conflicts that arise among the cattle owners(Group dynamics) etc.

To impart skills in organizing a method Demonstration of “Full hand method of milking” to the dairy farmers, we need

- Trainer or milker/students
- Few Milking Cows
- Interested farmers
- Appropriate place
- Other items such as milking vessels, milker rope etc.

The students must have:

- Knowledge about different methods of milking
- Skill in milking the cows with full hand method

- Advantages of full hand milking vis a vis disadvantages of knuckle method of milking
- Skill in organizing demonstration
 - Building up rapport with the dairy farmers
 - Winning trust and confidence among the dairy farmers
 - Identification of opinion leaders and key communicators
 - Selection of an appropriate place in the selected village
 - Skills to motivate the followers to participate in the demonstration
 - Arranging the cows in milk, milkers, milker ropes, utensils etc.
 - Skills to initiate discussion among the participants after the demonstration.
 - Skills to evaluate the impact of demonstration through arriving at the responses from the participants (spot evaluation)
 - Skills to motivate the participants to come forward to acquire the skills in Full hand milking
 - Skills to cultivate the habit of full hand milking through farm and home visit
 - Normal 0 false
 - Net working of the participants to resolve the issues during the learning process and help other farmers to acquire the skills



Most of the extension related skills are soft in nature and these skills include:

- Communication skills to build up rapport with the farmers, collection of relevant data,
- Analysis of the farming situation, root cause of the farmers' problems,
- Selection of appropriate extension methods to interact with the farmers
- Winning the trust and confidence of the farmers
- Group dynamics- composition, structure and functions of various groups, leadership etc. to involve them in livestock development programmes
- Ways and means to help the farmers
- Preparation and use of various teaching aids
- Organization of demonstrations, on farm testing, impact analysis etc.

It is also equally important to assess the type of skills required at different levels viz., Livestock owners, para vets and vets.

Constraints in Skill Development

There are no two opinions that more the exposure or opportunity provided to the students the better it is for them to acquire the skills properly. Unfortunately in many veterinary colleges the required skills are not being imparted mainly due to lack of or inadequate infrastructure in ILFC/ TVCC resulting in the students not able to acquire the skills in managing the farms or treating sick animals effectively. Shortage of trained faculty further aggravates the problem. This is one of the reasons why the veterinary graduates do not venture to establish livestock farms on their own as entrepreneurs.

Ways forward:

1. The ILFC and TVCC must be strengthened to provide ample opportunities for the students to acquire the skills. One or two veterinary Dispensaries (working under State Department of AH) which receive good number of cases could be converted into rural veterinary centres and must be brought under the control of TVCC to increase the student exposure to more number of cases.
2. The 6 months rotator training could be flexible to suit to the options of the students. As on today, this is not happening in any veterinary college because we implement the internship programme in to without any deviation. The net result is that our graduates are incapable of working in large scale or commercial establishments. They cannot venture into farm business. Therefore this 6 month training could be organized as follows:
 - Assess the areas (dairy, poultry, goatery, meat processing, Value addition etc) where there is a scope for the UG students to improve their skills.
 - Prepare a list of students based on their interests.
 - Document the list of entrepreneurs who wish to train our students.
 - Invite these entrepreneurs for campus interviews for selecting their prospective students based on their interests.
 - Accordingly the students could be attached to the respective entrepreneurs for a period of about 6 months.
 - Negotiate with entrepreneurs for payment of stipend.
 - The students who wish to go for advanced studies (MVSc) in particular disciplines may be given opportunities to sharpen their skills in colleges/ departments where such facilities are available. For example a student who wishes to go for small animal practice may be permitted to undergo training of 6 months in a TVCC or urban hospitals where turnover of small animal cases is good.
 - Similarly the students who are interested in wild life may be sent to a Zoo for 6 months to provide enough opportunities to learn the skills required in wild life management.
 - Those students who wish to become “jack of all master of none” could be given the existing 6 months internship programme.

This, I am sure will help the students to acquire the skills of their choice which enable them to get employed in the respective farms or processing plants and or embolden them to start enterprises on their own.

3. Entrepreneurship programme: Some veterinary colleges are successfully implementing the “earn while you learn programme” to help students acquire the required skills in their respective areas of interest. However, it has limitations in terms of the size of the farms and also the number of students to be accommodated. There is a need to increase the farm size, facilities in processing departments (LPT) to enable the students to acquire and sharpen their skills.
4. Extension skills : The major constraints in imparting extension skills are inadequate faculty, poor infrastructure, lack of logistic support like transport to visit villages and ill defined curriculum to mention a few. As a result the students are not able to acquire the desired skills in extension and they as veterinarians are not able to play the role of “Livestock advisor” effectively. All these need to be addressed.

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