SEMESTER 2
LEARNING AND FOCUS GROUP DISCUSSION GUIDELINES

STUDENT BOOK

UNIVERSITAS GADJAH MADA
FACULTY OF VETERINARY MEDICINE
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Learning and Focus Group Discussion Guidelines Semester 2
Second Edition
2018

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FGD Book for Student

Semester 2

Scenario 1-4

Integration and Synergy Courses:

- Veterinary Physiology I
- Veterinary Biochemistry II
- Angiology and Neurology
- Cytology, Basic Histology and Embryology
- Veterinary Basic Parasitology

Second Edition
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PREFACE

Education goals of Faculty of Veterinary Medicine Universitas Gadjah Mada (FKH UGM) which has been set in Renstra FKH UGM 2013-2017 are generating competent veterinarian in handling animal diseases and harmonizing animal health, human and its environment health, as problem solver pioneer of animal health problem, and ready to carry technical duties that fulfill standard competency of veterinary profession. Therefore it needs Higher Education curriculum that adjusted and harmonized to existing needs and developments, assessed periodically minimum once in 5 (five) years so that it fits to needs and demands of Higher Education graduates public user. Faculty of Veterinary Medicine hereafter, develops new curriculum with competency basis with SK Rektor (Rector Decree) No: 484/SK/HT/2013 on 24 July 2013, starting effectively since academic year of 2013/2014.

Main competency of Program Study FKH UGM graduates that develops in that curriculum is adjusted with mutual agreement in Provisions of Professional Education of Veterinary Assembly of Indonesian Veterinary Association (9 competencies), added with 9 supporting competencies that are development and characterization of Faculty of Veterinary Medicine UGM competencies.

Learning method applied is Student Teacher Aesthetic Rolesharing (STAR) or Student Centered Learning plus (SCL+) that combine Teacher Centered

Learning (TCL) and Student Centered Learning (SCL) proportionally according to learning outcome that will be achieved in learning. STAR principle is existence of harmonious relationship between lecturers and students, enhancement of reciprocal learning partners between students and lecturer, so *Patrap Triloka* is created, *ing ngarsa sung tulada, ing madya mangun karsa, tut wuri handayani,* lecturers properly becomes an example in front of students, motivates in the middle, gives supports behind with lecturers authority so that the students will develop. Harmonious relationship between lecturers and students is created since the beginning of the lectures through interaction in class and more focus through tutorial in Forum Group Discussion (FGD), and added with guidance to students to be long life learner.

Lecture delivery method in class is done by cooperative learning method, lecturers deliver materials and discussion, deliver what will be learn and why it needs to be learned by the students. On the inaugural lecture, coordinator of the Course (MK) deliver learning contract to students, learning contract content is suitable with Plan of Semester Learning Activities Program (RPKPS) that has compiled by lecturers team, introducing all lectures with each of their expertise with goal that the students know the lecturers and their expert since the beginning of the lecture, so that the lecturers are expected to be a role model for their students. After lectures in class are done, it is followed by tutorial activities in small classes through FGD for SCL application. Delivery method in FGD at the beginning of the semester is done with collaborative learning method, while for the next semester it can be done using

competitive learning, case-based learning, research-based learning, problem-based learning, and other way used according to learning objective.

This learning and FGD guidelines book is used for guiding the student during the FGD process and doing FGD program. We wish that output result in this learning and education process in Faculty of Veterinary Medicine UGM is able to prioritize intellectual ability for sharpening hard skills and improving soft skills based on moral and veterinary Ethics, can conduct its students to achieve competencies that have set.

February, 2018
Dean

INTRODUCTION

Focus Group Discussion is done through discussion inside small classes to discuss existing tasks in a designed scenario so that students can understand significantly, deeply, not only in the form of theory but more realistic in the form of scenario through synergy and integration of Veterinary Physiology I, Veterinary Biochemistry II, Angiology and Neurology, Cytology, Basic Histology and Embryology, and Veterinary Basic Parasitology Courses. Integral discussion from various course aims to support achievement of curriculum learning competency of Faculty of Veterinary Medicine.

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LEARNING OBJECTIVES

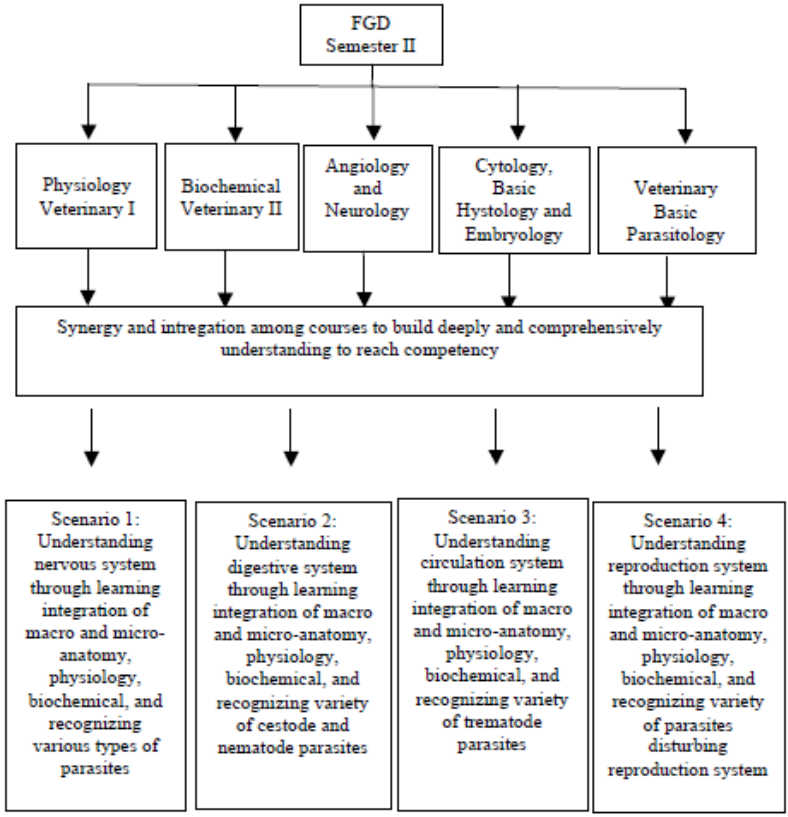
General Instructional Goal

Students are able to understand courses that learned through implementation of integration and synergy among courses to complete/ improve/ sharpen each other and share scientific, skill, and behavior concepts.

Specific Instructional Goal

Students are able to understand significantly of Veterinary Physiology I, Veterinary Biochemistry II, Angiology and Neurology, Cytology, Basic Histology and Embryology, and Veterinary Basic Parasitology Courses that mutually synergized and integrated in a scenario to be discussed.

LEARNING SCHEME



LEARNING OUTCOME

Integral discussion from various courses through scenario in FGD aims to support curriculum competency learning achievement of Faculty of Veterinary Medicine.

Learning Outcome of Veterinary Physiology I Course:

Students are able to explain basic functions, integration of nervous system and muscles, circulation system, respiration, termoregulation, endocrinology and digestion, and able to understand physiological concept related to other sciences.

Learning Outcome of Veterinary Biochemistry II Course:

Students are able to explain, understand, inform, compare and analyze various biochemical processes, such as enzyme kinetics and performance, vitamin role, mineral and hormones, bioenergeticity, metabolism of various biomolecule of carbohydrate, lipids, protein, nucleic acid, RNA and DNA in animals. Students are expected to be able to sharpen skills in doing cholesterol testing from various bllod (poultry and mammals), carbohydrate identification, protein isolation and DNA from various animals and able to do DNA and protein electrophoresis.

Learning Outcome of Angilogy and Neurology Course:

Students are able to understand and explain the definition of central nervous, peripheral nervous, somatic nerves, autonomic nervous (sympathetic and parasympathetic), sensory, motoric; able to understand morphology of nervous system including morphology of encephalon and spinal cord and their parts including cranial nerves and spinal nerves, types, natures and innervated tissues; understand morphology of cor and their parts and blood vessels that out or heading to cor, blood vessels in the cranium, cervical, thorax, abdomen, and extremities also innervated tissues; understand the lymphatic system: nodes / lymph nodules, lymph centers, and limpo gland; understand sensory organs including skin, eyes, ears, nose, tongue and able to explain the differences in various domestic animals.

Learning Outcome of Cytology, Basic Histology and Embryology Course:

Students are able to understand microscopic structure of cell and components of the cell in supporting general function of the cell; able to understand microscopic structure of tissues (basic structure and characteristics of connective tissues, epithelial, muscles, nerves in the body); able to explain the function of each tissues component in supporting general function of the tissues; understand the embryonic development stages of domestic animals since the occurrence of fertilization, then continue to the stage of morula, blastula, tubulation, organogenesis stages that occurs during the period of fetus; understand some teratogenic agents/materials causing impaired development of embryo or fetus; Able to relate varieties of cell shape with nucleus shape; able

to analyze interaction of each cell and constituent tissues of the body in operating general function of tissues; able to compare microscopic picture of 4 types of organ constituent tissue, able to compare ovum types and shape in domestic animals; skillful in observing cell shape, nucleus shape and nucleus position, tissues shape microscopically; skillful in observing zygot development that have cleavage and fetus development microscopically.

Learning Outcome of Veterinary Basic Parasitology Course:

Students are able to understand the important meaning of parasitology in veterinary; understand the concept of parasitology and the relation with other sciences especially animals pathology; understand about parasites life including: symbiosis and parasitism, parasite types, host and host types, parasites stages, life cycle and reproduction; understand the varieties of pathogen organism and their life patterns; master the problems of illness causes in animals and can use it in a differential diagnosis of a disease.

LEARNING ACTIVITIES

This learning activities series is prepared to direct the students reach learning objectives:

1. Learning method

Learning method used is through Student Teacher Aesthetic Rolesharing (STAR), by combining proportionally between teacher centered learning (TCL) and student centered learning (SCL) according to learning outcome that will be achieved.

STAR principle is harmonious relationship between lecturers and students, enhancement of reciprocal learning partners between students and lecturer, so *Patrap Triloka* is created, *ing ngarsa sung tulada, ing madya mangun karsa, tut wuri handayani,* lecturers properly becomes an example in front of students, motivates in the middle, gives supports behind with lecturers authority so that the students will develop. Harmonious relationship between lecturers and students is created since the beginning of the lectures through interaction in class and more focus through discussion activities in forum group discussion (FGD), and students guidance to be a long life learner.

2. Lectures

Lectures method is used by lecturers delivering/presenting materials and discussion, delivering what will be learned by the students and why should it be learned. On the inaugural lecture,

coordinator of the Course (MK) deliver learning contract to students, learning contract content is suitable with Plan of Semester Learning Activities Program (RPKPS) that has compiled by lecturers team, introducing all lectures with each of their expertise with goal that the students know the lecturers and their expert since the beginning of the lecture, so that the lecturers are expected to be a role model for their students. Plan of Semester Learning Activities Program (RPKPS) and teaching materials must be given to students to be copied (or given to Library as narration/ reference/ students learning materials). Coordinator of MK introduces all of lecturer team and facilitators involved from each division with each expertise.

In applying curriculum competency basis, lectures are held by combining with group discussion in small classes, aim to make students obtain enough lecture materials and followed by self study time addition. Lectures are held based on specified learning outcome in reaching competencies. Integration and synergy among courses are held through FGD that discuss certain scenario, to increase and sharpen students understanding. Lectures can be held between FGD schedule, to give chance to student for clarifying and discussing unanswered students question in group discussion.

3. Group discussion in FGD with facilitator mentoring

FGD is scheduled twice a week. If facilitator could not come because of certain reasons, it should be

substitute by other facilitator. If at the fixed schedule the facilitator has not come yet, relevant students group should inform academic as soon as possible. During discussion process, all of the groups should bring relevant learning sources that might be needed during tutorial.

To reach learning objective in the first semester, collaborative learning method is used, that held in twice discussion meeting in discussing one same scenario. Basic questions that should be underlined are: What have we known? What else that we expected to know?

First FGD:

- All students are divided into 12 classes, each of class consist of 12-16 students.
- Facilitator explains the discussion process and scenario for discussion
- Facilitator divides the class into small groups of 5-6 students
- Facilitator asks each students to read the scenario relevant to materials learned
- Facilitator asks the students to do task relevant with perception and solution towards cases/problems in scenario
- Facilitator asks students to discuss their work results in each of their small groups, led by one of the students (as chairman) helped by one other students (as secretary)
- Facilitator asks each of small groups discuss the group agreement

- Facilitator asks each of the students to make report of discussion results with by searching reference sources as wide as possible. Contents of the report are: discussion topic, learning objective, learning scheme, analysis, conclusion, learning outcome (explaining student ability after discussing topic in scenario), references.
- Facilitator asks every small groups prepare their discussion results in the form of power point that presented by one of the group representatives in the second FGD meeting.

Second FGD:

- Facilitator asks every students to submit complete report
- Facilitator asks each of the group to present group discussion result
- Facilitator asks other groups to give feedback to presentation result

Facilitator Job:

- Facilitator must be present on schedule. The facilitator's delay in attending is a maximum of 10 minutes (the rest will be replaced by a substitute facilitator).
- Directing and facilitating the discussion, lecturers put themselves as trend setter applying *patrap triloka ing ngarsa sung tulada, ing madya mangun karsa, tut wuri handayani* (in front becomes example, in the middle motivates, at behind gives support with lecturers authority so that students can develop).

- Giving assessment to students activities during discussion in the first and second FGD, with assessment through 3 aspects:
  1. A = Attitude (mental and manner) = affective
  2. S = Skill (competent, expert, adaptable to positive competency) = psychomotor
  3. K = Knowledge (building intellectual capital) = cognitive

4. **Group discussion without facilitator mentoring**
   According to group needs, students can held a meeting without facilitator. Aims of this discussion are varies, for example, identificate theoritical questions, identificate group learning objective, ensure that group have already submitted all of the information needed, and identificate practical questions.

5. **Practice**
   Held by Laboratorium in Division to enrich students understanding about discussed concept related to science development. Exercise to improve skills that needed by veterinarians to fulfill their competencies also given intensively (such as communication with clients skill, clinical skill, etc.)

6. **Expert consultation**
   This activity is held based on needs and held by groups of students, by directly contacting the relevant competent lecturer. It is very recommended for the chairman of the group make an appointment before with the relevant experts.

7. Self study

As mature learner, students are expected to able to applied self study, a kind of important skills for developing personality and career in the future. This skill including ability to find personal interest, find more information from various learning sources, decided the appropriate learning style, and identificate further learning needs. Students will not feel enough to study only from lecture notes or text books. Self study is the most important character of SCL approach, and in the certain level, study will be an unlimited journey.

8. Class discussion

Class discussion can be held through lectures between FGD schedules. The aims of this discussion are to give explanation and compare learning process among groups to prevent wrong direction groups in the discussion. All of the groups can propose certain issues to be discussed, and facilitator or lecturers will answer questions based on their own competencies.

GENERAL ASSESSMENT

Some assessments to evaluate students learning results achievement:

1. **Formative Exam**
   Students will be given series of pre-test or post-test during lectures. This test is unscheduled, so that will force students to learn the materials since the beginning of learning. This test gives contribution to student final grade. So that, if there is a students disturbed in their final tests, this tests will help the final grade result.

2. **Summative Exam**
   This exam is done in the mid-semester (mid-semester exam/UTS) and semester final exam (UAS). Students should prepare themselves to take summative exam. A mature learner can achive better result because s/he can utilize time effectively to achieve goals.

3. **Remidial Exam**
   Students are possible to tak eremidial exam to improve grades of certain MK that failed. This exam is held at the end of final semester exam.

BLUE PRINT OF ASSESSMENT

STUDENTS ASSESSMENT COMPONENTS

- ✓ FGD 15 %
- ✓ Practice 25%
- ✓ UTS + UAS 60 %

Types of question:

- MCQ with answer types of a, b, c, d, e
- Essay
- etc.

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Scenario 1
(FGD Semester 2)

Nervous System and Protozoa

Dido brought his beloved *Springer Spaniel* dog to RSH (Animal Hospital) Soeparwi, because it walks unsteadily and oftenly fall without showing the signs of pain. When it is examined, Doctor said that his dog shows tremor in head, proprioception disorder in caudal extremity, not responding metatarsal part but metacarpal reponds well. Doctor said that this dog suffers incoordination due to disorder in cerebellum as one of the part of central nervous system. Dido recalled when he watched discovery channel program about nervous system. In that program, it is explained that nervous system regulates all of the work mechanism in the body. It is clearly illustrated that brain consists of million nerve cells (neuron). These cells have dendrites, axons, sinaps, and cell bodies that have special functions respectively. Cells inside living organism body are explained to be able to result energy in order to move. One of the interesting molecular components inside body is lipids that have big role, as main energy reserves, and constituent of cell membrane. In RSH, Dido also saw 2 other dogs that have clinical different symptoms. One of them cannot shut the mouth, the other cannot walk. Do all of these cases related to nervous system? Dido also thought about his neighbor's child that has enlarged head, that people say it is infected by cat viruses. Dido gets explanation from Doctor that the disease might be

toxoplasmosis that caused by *Toxoplasma gondii* including protozoa, not virus.

Learning objectives:

1. Students are able to understand nervous system either macroanatomically or microanatomically, supported through understanding of nervous system that is taught in Physiology course, and understand cells metabolism taught in Biochemistry course, so that each of these courses that learned integratedly can complement/ increase/ sharpen each other.
2. Students understand and able to explain morphology of various protozoas, stages and life cycle including predilection and hosts/landlords.
3. Students can mutually collaborate, sharing concepts, skills and behavior in discussion.

Scenario 2
(FGD Semester 2)

Digestive System, Nematode, Trematode, and Cestode

A farmer came into RSH Soeparwi reporting the death of his cows. Based on the anamneses, cows are given concentrate for some weeks, then stopped for a while because the concentrate is running out, substituted by forages and grains, and then given concentrate again. Suddenly some cows were dead. Alive cows show symptomps of lethargi, incoordination and diarrhea. Physical examination results show dry mucosal mouth, dehydration symptoms, and the rumen tonus (rumen atoni) is not palpable. Seeing these conditions, doctor ordered co-assitance students to take the cow's feces to be examined in the laboratory for suspect of worm infection, and after the feces examination is done, eggs of cestodes, trematodes and nematodes worms are found. Necropsy result of dead cows found the distention rumen containing forages, grains and fluids, pH of rumen fluids is under 4,5 (normal 5,5-7,0). Examination in digestive tract, many worms are found in digestive tract with different shape and size. Hystopatology examination result shows damage in epithelium in digestive tract. Doctor, who handles that farmer's case, suggests changing the ration composition with balance forages and concentrate in order to obtain maximum energy. Forages given are grasses, because this plant is easy to care and grow faster than other plants that are not in Graminae class. Routinely, it needs to be checked the

existence of parasites in feces and conducted parasites medication according to founded parasites. It is expected that cows become health and grow normally because of changing ration composition and parasites medication.

Learning objectives:

1. Students are able to understand nervous system in digestive macroanatomically and microanatomically that is taught in MK Angiology and Neurology and MK Cytology, Basic Histology and Embryology. Students are able to understand process of digestion, absorption and fermentation taught in MK Veterinary Physiology 1, and understand carbohydrate metabolism and photosynthesis process taught in MK Veterinary Biochemistry 2, so that each of these courses that learned integratedly can complement/ increase/ sharpen each other.
2. Students understand and able to explain morphology of various nematodes and trematodes, lif cycle including predilection and hosts/landlords that are taught in Veterinary Basic Parasitology course, and microanatomically know ephitel, glands, tissues, and smooth muscles in digestive tract that are taught in Cytology, Basic Histology and Embryology course.
3. Students can mutually collaborate, sharing concepts, skills and behavior in discussion.

Scenario 3
(FGD Semester 2)

Circulatory System and Trematode

A first semester student of FKH brought his lovely dog to RSH because the dog looks lethargic, weak, anorexia, rapid breathing with opened mouth. In physical examination, it is looked pale eye mucosal, pulsus on femoral artery is palpable weak, cardiac auscultation sounds fast but weak. On duty doctor took blood sampling through veins for diagnosis confirmation. That first semester student also paid attention, why did the heart rate examination was done in hip (rear leg), but blood sampling was done in lower front leg? When s/he paid attention to the doctor who examine horse patient, the doctor felt its lower jaw to examine its heart rate? What are the differences? One day later, the student's lovely dog was dead and brought to Pathology Laboratorium to be necropted, s/he noticed why did its cardiac walls were not in the same thickness? Why there were fibers inside its heart that transvere from one side to the other? Was that the cause of his/her lovely dog disease? How did the small heart like that could pulse and pump blood? How was the beginning of pulsing heart? Did the pulse of upper and lower part are occurred simultaneously or alternately, how were the way to continue the pulse? How did the blood can reach throughout the body, through which ways, while there are many vessels panhandle from heart?

That student tries to remember embryology lecture about organogesis of circulatory system. According to the lecturer, circulatory system organogenesis begins with blood forming and its vessels grow from blood islands in splangnik mesoderm. Primitive blood vessels develop into subintestinal capillary, supraintestinal capillary, vitelina capillary/onfalomesentrika capillary. Sub intestinal capillary in foregut ventral combined and migrated from lateral to medial forming heart.

Various changes were actually found in that dog, lecturer said that dog might suffer schistosomiasis. The student, the owner of the dog, wonders what schistosomiasis is?

Learning objectives:

1. Students understand circulatory system looking from learning integration of macroanatomy, microanatomy, its physiological functions, so Angiology and Neurology course, Cytology, Basic Histology and Embryology course, and Veterinary Physiology 1 course that learn integratedly can complement/ increase/ sharpen each other.
2. Students understand circulatory system organogenesis by comparing constituent structures of heart in embryo and adult.
3. Students understand physiological process of heart pulse, functions of each blood cells also mechanism of substance exchange in blood vessels.
4. Students understand the classification of multicellular parasites, recognize various trematode parasites, including *Schistosoma* sp.

5. Students can mutually collaborate, sharing concepts, skills and behavior in discussion.

Scenario 4
(FGD Semester 2)

Reproductive System, Cestode, and Ectoparasite

FKH-UGM students of academic year 2013 under the supervision of Doctor Slamet observe development of pregnant rabbit until giving birth to its bunnies in UPHP hutch. Students want to know how bunnies can live inside the parent's womb, is there any circulatory system that connect between parent and their cubs? After the bunnies are born, Doctor Slamet explains that the sex of the rabbit is female. Based on reproduction and uropoetica system, organs are developed from mesodermal layers that are nefrotome and genital ridge which next with the impact of androgen hormone in gestation period will be determined the sex of male or female embryo. In female gonads, Mullerian duct develops oviduct, uterus, cervix and vagina while Wolfii duct regresses. In male gonads, rete testis produces mullerian inhibiting factors that cause Mullerian duct regression, whereas Wolfii ducts develop into male sexual organs under the influence of androgens. Disturbance in the embryonic stage, androgen receptors are not sensitive so it grows Mullerian duct, because of that, appearance of external genital of bunnies does not change into male. After birth, bunnies will grow under the influence of growth hormones helped by thyroxine and triiodothyronine synthesized by amino acids. The observation result of parent rabbits, Doctor Slamet found lesions on the skin and most of the hair loss, and after

examination by skin scrapings, mites are found, feces examination result found cestode worm eggs.

Learning objectives:

1. Students are able to understand organogenesis of reproduction system, circulatory system between parent and child inside womb, and hormonal system through understanding integratedly among Veterinary Physiology 1 course, Veterinary Biochemistry 2 course, Angiology and Neurology course, and Cytology, Basic Histology and Embryology course, so that each of course that learned integratedly can complement/increase/sharpen each other.
2. Students understand various types of hormones looking from basic ingredients and target organs. Besides that, students are expected to be able to explain each hormone functions and hormone secretion mechanism.
3. Students are able to understand various types of ectoparasite and cestode, their life cycles and the stages.
4. Students can mutually collaborate, sharing concepts, skills and behavior in discussion.