European Association of Establishments for Veterinary Education

European System of Evaluation of Veterinary Training

REPORT ON THE VISIT TO THE FACULTY OF VETERINARY MEDICINE OF COPENHAGEN

Sept. 27 – 1. Oct. 2010

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This report comprises largely information obtained during the site visit with the SER1 having been the document of reference. The SER1 should therefore be available to the reader of this document.

CONTENTS

INTRODUCTION

The School of Veterinary Medicine of Copenhagen has a long standing history and tradition dating back to the time of the funding of the very first veterinary schools in Europe. The Campus within the boundaries of the city of Copenhagen is a perfect blend of old brick buildings, some of them historical landmarks, and modern structures, all well equipped to the highest state-of-the-art standards. This creates an ideal academic atmosphere which is reflected in pride of belonging and a strong sense of corporate identity throughout staff and students of the Veterinary departments. This strong perception of identity has apparently not been altered by the recent creation of the LIFE Faculty (see Organisation). The University of Copenhagen ranks among the leading academic institutions in Europe (nº 15) and in the world (nº 51); from its ranks stem 8 Nobel Prize winners.

The main Faculty is situated on the Frederiksberg Campus (formerly known as the Royal Veterinary and Agricultural University (KVL)) within the city of Copenhagen. A new large animal hospital and a research farm are located in Taastrup about 20 Km west of Copenhagen.

There has been a gradual increase in the number of admitted students in the 1st year from 120 in 2003 to 186 in 2006.

In 2004 the main departments teaching in the veterinary curriculum were reduced to four.

Major curriculum changes were implemented as a result of new University regulations (University Act). These changes comprise the introduction in 2005 of a compulsory Bachelor thesis (at least 10 ECTS) and Master thesis (at least 30 ECTS). Students also must complete 32 ECTS in electives before graduation, which represents a minor form of tracking system. Currently, the Faculty employs a new curriculum introduced in 2009 to comply with AVMA/COE (American Veterinary Medical Association/Council on Education) and EAEVE/FVE new standards.

In 2007 the KVL together with the Danish Pharmaceutical University merged with University of Copenhagen. Hence the KVL became the Faculty of Life Sciences (LIFE), so the Rector of KVL became the Dean of the Faculty. Since 2005 the Dean and the heads of departments have been appointed instead of having been elected.

Student's admission procedure was also changed in 2008, and at present is based not only on high school grades but also on an entry exam and on an individual interview. (for details see chapter "admissions")

The veterinary curriculum was evaluated by the Advisory Committee on Veterinary Training (ACVT) in 1987-88. Appendix 1 of the SER1 (pages 75-77) shows the suggestions and the KVL's follow up.

In 2001 the KVL (now Faculty of Life Sciences) had an EAEVE/FVE visitation with positive outcome (approval); the suggestions raised at that time are described in Appendix 4 of the SER1 (pages 90-93).

1. OBJECTIVES & STRATEGY

Questions to be covered:

1) *Clear statement of objectives?* ***Yes***
2) *Do the objectives cover the total education programme adequately?* ***Yes***
3) *Is undergraduate education the primary reason for the existence and funding of the establishment?* ***Yes***

1.1. Findings

Major objectives and goals are all well formulated and detailed in the SER1. The most important overall goal is excellence in research, thereby being an international leader in the academic field. The strong emphasis of research based-teaching, visible throughout, is an obvious consequence of these objectives.

1.2. Comments

None

1.3. Suggestions

To enhance internationality on all levels – students and staff – in order to continue to or to fulfil the high set goals of being a leader among the international academic family to an even larger extent.

2. ORGANISATION

Questions to be covered:
1) Brief structure and organization summary ***(see text)***
2) Does Faculty have adequate influence on University policy? ***Yes***
3) Is it suitably "autonomous" i.e. does it have adequate flexibility? ***Yes***
4) Effective structure for decision making? ***Yes***
5) Are Departments coordinated amongst themselves in terms of use of resources? ***Yes***

2.1. Findings

The merger in 2007 of the KVL with the University of Copenhagen and the Danish Pharmaceutical University and the subsequent forming of the Faculty of Life Sciences (LIFE) is viewed by some as being to the disadvantage of Veterinary Medicine. In fact, the term "Veterinary Medicine" does not appear explicitly among the areas covered by LIFE, nor is it listed on the LIFE website as one of the seven core competences, even though the veterinary school alone has about 1/3 of all the students of LIFE. The team raised some concern that by ceasing to be an identifiable entity (Faculty or College) with a strong leadership structure (Dean, President or Rector), Veterinary Medicine may have lost valuable influence on important aspects of its affairs, e.g. funding, which in turn may have consequences for the quality of teaching.

LIFE consists of 3 areas (agriculture, food science and veterinary medicine) with Departments as the main organisational structures. Four of those form the veterinary area. Three are housed at the Frederiksberg Campus (Basic Sciences, Disease Biology and Small Animal Clinical Sciences); the Large Animal Department is housed in Frederiksberg as well as on the Taastrup Campus.

Administrative bodies and structures are described in detail in the SER1.

2.2. Comments

The new structure and organisation of the LIFE Faculty is innovative and takes the general European trend of merging academic structures to a high level. The present division in multidisciplinary departments on equal organisational level promotes interrelation and multidisciplinary approaches in research and teaching. Facility and equipment sharing is enhanced and the administrative load may have been lowered as well. On the other hand, the impression remains that the individual areas may have lost some visibility, at least as far as veterinary medicine is concerned.

2.3. Suggestions

To render external visibility of the veterinary area stronger, we recommend introducing the name of "Veterinary School" to better describe and define the organisational coherence of the 4 departments of the veterinary area within LIFE. This would also provide the veterinary departments with an identity that is more in line with the international perception of a veterinary teaching establishment. This recommendation is not meant to alter any organisational or structural aspect of the very positively evaluated merger which yielded from the merge with University of Copenhagen.

3. FINANCES

Questions to be covered:
1) Short summary of financial and budgetary structure and who controls it? ***(see text)***
2) Any additional income generated? ***Yes***
3) Is level of funding adequate? ***Yes***
4) Is there a good balance between capital spends and running costs? ***Yes***
5) Is there a good balance between research and teaching funding? ***Yes***
6) How much autonomy to allocate budget? ***(see text)***

3.1. Findings

The following information, although described in the SER1, warrants additional explanation:

The "taximeter system" of funding is a unique transfer of funds for teaching from the University to the Faculty and depends on the number of students enrolled and their individual progress in learning. That is, the University pays 70.000 DKK (€9400) per every 60 ECTS passed per student. These payments are commensurate with the individual student's progress up to the final 330 ECTS of the completed curriculum. In addition, there is a bonus for each student finishing the BSc and/or MSc part of the curriculum within the minimum required study time.

The Departments have substantial financial autonomy with the department heads delegating some of this authority to inner-departmental group leaders for further distribution of government and taximeter funds (within the departments of LIFE, there are 49 such groups).

External funds, generated by research, clinical services or industry projects, return to the departments and the respective research groups for use largely at their discretion.

Net revenue of clinical services also returns to the respective service.

Budget cuts of approximately 3% of the overall University budget are anticipated for 2010/2011.

Salaries for individual teachers and researchers (for instance for promotion or hiring) can be negotiated within certain parameters with the Dean.

3.2. Comments

The financial basis of the Faculty is sound. Despite its complexity the distribution mechanism of funds is transparent and largely outcome driven.

The "taximeter system" is unique and an incentive for good teaching and learning.

The emphasis on research-based teaching and research in general generates a very satisfying amount of external research funds and maintains very competitive PhD programmes which also gain from the interactive nature of the multidisciplinary, multi-departmental structure of the Faculty and the University.

3.3. Suggestions

It should be evaluated whether students should not pay at least a modest amount of tuition in accordance with other European schools and in order to compensate for increasing financial demands of high quality teaching.

If measures to avoid negative effects of anticipated budget cuts are already in place , they should be strengthened. If not in place yet, such strategies should be taken immediately, especially at department level.

4. CURRICULUM

4.1. GENERAL ASPECTS

Questions to be covered:

1) *Seems as in SER or indicate variances?* ***As in SER***
2) *Curriculum fixed by law or otherwise?* ***By law***
3) *Important to verify clinical training figure in SER corresponds to supervised intensive hands-on clinical training in small groups. Note: extramural vacation work or large group demonstrations should not be included as clinical work.* ***(see text)***
4) *Curriculum balance and coverage OK?* ***Yes***
5) *Comment on practical : theory ratio* ***(see text)***
6) *Ratio of clinical work : lectures and practical work must be checked with SOP* ***(see text)***
7) *Ratio of theory : practical and clinical work must be checked with SOP* ***(see text)***
8) *Comment on courses integration, electives & extramural work arrangements* ***(see text)***

4.1.1. Findings

The curriculum is imposed by Ministerial decree on Bachelor and Master Programmes (338, 6th May 2004; 1402, 14th Dec 2009 and New Decree, 814, 21st June 2010) and by the Danish University Act (1368, 7th Sep 2007).

The entire veterinary curriculum comprises $5^{1/2}$ years, equivalent to 330 ECTS (60 ECTS/year). According to the law, this curriculum is divided into a Bachelor (BSc) programme of 3 years and a Master's (MSc) Programme of $2^{1/2}$ years. Every year is organised into four 9-weeks blocks with an interim week during which retake of exams take place (regular exams are taken in the 9th week of every given block).

The veterinary BSc programme comprises 180 ECTS (150 ECTS compulsory courses and 30 ECTS electives). The veterinary MSc programme comprises 26.5 ECTS electives in one of the following 4 tracking programmes: "Advanced companion animals", "Equine clinic", "Biomedicine" and "Herd health and veterinary public health". An overview of the whole curriculum is offered in Figure 4.2 of the SER1 (page 22).

Currently the Faculty runs the new curriculum established in 2009 that applies for the 1st and 2nd years of the BSc degree and still maintains the 2005 curriculum (described in Appendix 3, pages 85-89 of the SER1) for the 3rd year of the BSc degree and for the whole MSc degree. The 2009 study programme is thoroughly described in chapter 4 (pages 21 to 31) of the SER1.

In the SER1, self directed learning is not considered as sessions where individual students make use of defined teaching material provided by the Faculty (i.e., e-learning) but as the students' individual work in the development of the BSc thesis and MSc thesis.

Groups for practicals, even the clinical ones, seem to be very large (25 students/group) according to the data of the SER1 (pages 29-30) but during the visitation the team verified that these groups mean a mere organisational distribution of students in a given practice. For the development of the practical the group splits into subgroups of small enough size to guarantee more than adequate hands-on training (2-3 students/animal).

Attendance to lectures, seminars, etc, is voluntary. Non-clinical and clinical practicals are compulsory with a minimum of 80% of attendance required to pass.

Table 4.1a (page 23) of SER1 shows the training hours and workload of the compulsory veterinary curriculum 2009 that applies to all undergraduates students.

4.1.2. Comments

The team noticed a very efficient coordination and integration amongst subjects and welcomed the relative decrease in basic subjects in favor of clinical subjects as well as the integration of some contents of basic sciences into clinical sciences in the new curriculum 2009 (i.e. integration of Topographic Anatomy into Diagnostic Imaging).

The introduction of a better organized and defined block structure in the curriculum 2009 was also positively noted.

The system of electives is well organized, as a minor tracking system with clearly defined objectives.

The team recognized the good balance of the 2009 curriculum that offers the students more practicals than lectures in most courses. The amount of hours of clinical training is very satisfactory especially in the MSc degree.

4.1.3. Suggestions

None

FOR ADDITIONAL INFORMATION SEE STUDENT'S REPORT

4.2. BASIC SUBJECTS & SCIENCES

Questions to be covered:

1) *Do basic subjects form part of the internal curriculum or are they taught elsewhere?* ***(see text)***
2) *How are carcases handled for anatomy and pathology with relation to chilling/freezing, hoists, trolleys, changing facilities and disposal?* ***(see text)***
3) *Do incoming students have adequate basic knowledge?* ***Yes***
4) *Are items taught in basic sciences brought into relation to later courses?* ***Yes***
5) *Adequacy of hours and course materials as well as balance between practical and theoretical work?* ***(see text)***
6) *Is there adequate hands-on participation by students in anatomy and pathology?* ***Yes***
7) *Are the groups too large?* ***No***

4.2.1. Findings

The curriculum hours in the basic subjects and sciences taught in the Faculty of Life Sciences form part of the internal veterinary curriculum and are shown in the SER1 (Table 4.2; page 25). Some basic subjects and basic sciences mentioned in the EU Directive and the EAEVE SOP are taught as independent subjects, while others are integrated into another subject, as is the case of Biostatistics taught jointly with Epidemiology.

Several teachers of the basic subjects are not veterinary surgeons although their degree falls in the field of health sciences (Animal Production, Physicians, Biologists and Pharmacists). The basic subjects are well coordinated to avoid overlapping or gaps in their contents and are truly focused on covering Veterinary Medicine fundamentals as was recognized by students and professors of later professional courses.

The content of the basic subjects and the number of lectures is sufficient. The proportion of theoretical and practical classes is very well balanced to promote practicals, taking into account that the overall hours of lectures taught in basic subjects and basic sciences amount to 527 over a total teaching load of 1,353 hours in these subjects.

The groups in practicals are large, 15-20 students, but most often are divided into smaller subgroups and are well assisted, with 1 professor, 1-3 junior staff, 1 technician and/or 1-2 PhD students to guarantee a satisfactory level of hands-on supervised work in the laboratories and in the dissection room, employing also state-of-the-art imaging and communication systems.

The number of the teaching and support staff at the departments teaching basic subjects is sufficient.

4.2.2. Comments

The basic sciences are well covered, coordinated and taught with an emphasis on practicals usually accompanied with lecture notes. Teachers provide notes, PowerPoint presentations, videos, etc in the Faculty's intranet (Absalon) to facilitate each student's individual work and e-learning.

4.2.3. Suggestions

None

4.3. ANIMAL PRODUCTION

Questions to be covered:

1) *Is there a working farm where students can do practical work on animal production?* ***Yes***
2) *Is there any early exposure to handling of farm animals for city students?* ***Yes***
3) *Are there sufficient hours of teaching in animal production and is there a good balance between practical and theory?* ***Yes***
4) *Is agronomy taught and where (silage production, pasture management and use of particular feeds/plants etc.?* ***Yes (see text)***
5) *Is animal production teaching well integrated with related subjects i.e. herd-health management and ailments caused by poor or in-balanced nutrition?* ***Yes***
6) *Does the teaching of forensic and state veterinary medicine cover the principles of certification with regard to animal transportation?* ***Yes***

4.3.1. Findings

LIFE has four research units at the Taastrup Campus, three of them being stables for large animals. Furthermore, there is one new building with laboratory facilities and equipment. The Frederiksberg Campus contains four small, old stables and one new state-of-the-art research building for experimental studies, largely in swine and small ruminants.

Furthermore the Departments of Large Animal Sciences, Small Animal Clinical Sciences and Veterinary Disease Biology have some contractual arrangements with farms, veterinary practitioners and slaughterhouses.

Research farms of the Faculty are mainly used to train students on individual animals while principles of herd management are taught on private farms under contract with the Faculty.

Students starting the Veterinary Medicine programme come mainly from urban areas; consequently they are not familiar with farm animals. For this reason an introductory veterinary medicine course has been established for 1st year BSc students to provide them with practical and theoretical knowledge about animal production and management.

The curriculum contains sufficient hours of teaching in animal production and the balance between theory and practicals is satisfactory.

The only EU-listed subject regarding animal production that is taught as a separate specific course is Animal Nutrition which is taught in the course “Nutrition and Breeding” in the 2nd year of BSc). Animal husbandry, veterinary hygiene and aspects of animal production that are not taught in the Veterinary introductory course, are taught in the course “Herd Health and Public Health” in the BSc programme and “Practical Herd Consultancy and Meat Inspection” in the MSc programme. Half of this course is devoted to practical herd health and half to meat inspection. Students are also exposed to concepts of animal production during clinics and practical work at experimental farms. Even if economics of animal production is not specifically taught, students learn how to make decisions based on the cost-benefit concept. Animal ethology and protection are taught both in BSc and MSc programmes in the courses of “Veterinary Jurisprudence and Ethology” and “Veterinary Jurisprudence and Assessment of Animal Welfare”. Students also learn about EU legislation regarding diseases, transportation and animal protection.

The Veterinary curriculum has been temporarily expanded with an experimental, elective Master Course in animal health research and health promotion (22.5 ECTS). It has been decided to establish an Elite module in research based education, because the teaching staff believes that veterinarians must be able to collect, manage and analyze data on animal health in a scientific way. The government provides funding to sustain this Elite module and to be used, for example, to pay highly qualified external professors.

4.3.2. Comments

The idea of the new curriculum is to give to the students a holistic approach to problems they will face during their professional life. This approach could be fruitful for the students, but it is quite demanding for the teachers. The splitting of animal production subjects within courses in which students are exposed to different items highlights the integration of animal production teaching with other related subjects.

4.3.3. Suggestions

In the new 2009 curriculum, small ruminants production gains little attention as this species apparently does not represent an important economic aspect in the Danish agriculture, however, the university should be flexible and should enhance teaching in this topic if small ruminants production gains in importance in the near future.

Practicals in poultry production at the farm level ought to be offered to the students, not exclusively in electives but also in mandatory courses as poultry is – along with cattle and swine - one of the main sources of meat production and consumption in the EU.

4.4. CLINICAL SCIENCES

Questions to be covered:

1) *Does the establishment operate an emergency veterinary service in which students participate and is the latter compulsory or voluntary?* ***Yes (see text)***
2) *Does the establishment operate a mobile clinic and how do students participate in the activities?* ***Yes (see text)***
3) *Are students covered by liability insurance during extramural work?* ***Yes***
4) *Are allocated hours adequate and in balance with the curriculum?* ***Yes***
5) *Are disciplines integrated and well coordinated?* ***Yes***
6) *Is there a satisfactory balance between species?* ***(see text)***
7) *Is each student getting adequate hands-on clinical teaching?* ***Yes***
8) *Brief comment on adequacy of facilities, environment, organization, caseload, necropsy case load, staff and support staff?* ***(see text)***
9) *Are adequate opportunities offered for each student to handle parturitions, dystocias, displaced abomasums, traumatic reticulitis, milk fever, acetonaemia?* ***(see text)***
10) *Would all students be able to perform an ovario-hysterectomy on a cat alone?* ***(see text)***

4.4.1. Findings

The clinics operate an emergency service for small and large animals. Students choosing the “Equine Clinic Tracking Programme” or the “Advanced Companion Animal Tracking Programme” take part in emergency and critical care. Students pursuing other tracking options can participate in the emergency service in the in-house clinics as well as in the mobile clinic emergency service out of hours (page 30 of SER1). For emergency service, there is a veterinarian on-site until midnight, and a technician and a veterinarian are on call from midnight until 8 am.

The establishment operates a mobile clinic. Mobile clinical practice is no longer (2009 curriculum) part of the compulsory clinical training. However, students can take part in the mobile clinic’s out-of-hours emergency service. In the equine clinic tracking programme, students spend four weeks in the mobile practice (page 30 of SER1), which is mostly an ambulatory equine practice.

All students are covered by the same liability insurance as staff members.

In accordance with suggestions made after the previous EAEVE/FVE visitation, teaching hours in the core clinical subjects have been increased from 96 ECTS in the 1994 curriculum to 127.5 ECTS in the 2009 curriculum (page 90 of SER1), with compulsory clinical hands-on work amounting to 1,064 hours (page 33 of SER1). The 2009 curriculum is the result of intense discussion between 4 working groups and has been made possible by far-reaching coordination and integration. For instance, the disciplines of reproduction, surgery and internal medicine are integrated into two large blocks: small animals and large animals. Equal times are allotted to small animals and large animals (page 32 of SER1). The clinical teaching staff appeared quite satisfied with this increase in integration.

In the various teaching elements visited by the team, it could be observed that students received intensive hands-on training. Compulsory clinical hands-on work has been increased considerably from 414 training hours to 1,064 training hours in the current (2009) curriculum.

The clinical facilities, especially the new Small Animal Teaching Hospital (in the final stages of construction) are very impressive, and probably define the current state of the art, rather than approaching it, even though the division of the veterinary school on several sites is not optimal.

The Frederiksberg campus is beautiful and remind of the campuses of an American Ivy League university.

Not every student has a chance to handle parturitions, dystocias, displaced abomasums, etc, but the establishment makes considerable efforts to make up for the dearth of farm animal in-patients by instructional visits to both, cattle and pig farms, and by purchase of animals (e.g. calves for obstetric exercises and fetotomy). The team verified that all students perform at least an ovariohysterectomy in live piglets, and some in dogs and cats.

The amount of hands-on clinical training certainly seems more than sufficient. All things considered, the caseload is adequate, with the possible exception of pet birds.

In buiatrics, there are probably not many veterinary schools in the world where every student has a chance to be exposed in practice to all those clinical scenarios which are taught in the classroom. At the Herd Health and Vet. Public health tracking students may spend up to 6 weeks with large animal practitioners as part of the clinical core programme.

Specialisation within the clinical services is well developed; however, the number of Diplomates of European or American Speciality Colleges is relatively low and should be increased, with residency programmes following. Also, the development of rotating clinical internships is strongly recommended in small as well as in large animal species. Clinical teaching and clinical research will be significantly enhanced by enacting such measures.

The emergency service at the small animal teaching hospital is fully staffed on-site only until midnight. From midnight to 8:00 am, an on-call service, which includes veterinarians and staff is fully functional 7 days a week. Students regularly participate in the emergency service until midnight. The emergency service staff also cares for animals housed in the intensive care unit. If hospitalised animals require continuous attention, 24 hours veterinary surveillance is guaranteed. The visitation team notes that a new speciality “Emergency and Critical Care” is developing in Europe, with a European Specialty College about to form; such a College has existed in the USA for many years. A high standard University Teaching Hospital should encourage future specialisation in this field.

The emergency service has low visibility for clients entering the hospital at night. Referring veterinarians (information obtained from a single practitioner only) complain that veterinarians or staff are reachable by telephone only with great difficulty; this is particularly true when referring cases to the hospital.

The presence of veterinary staff and students on night duties at the 24/7 emergency service already in place on an on-call basis would improve the image of the establishment with the local practitioners. From the standpoint of undergraduate training, it would only be beneficial if students’ attendance during night emergency duties was of a compulsory nature.

4.4.3. Suggestions

The plans and strong intentions of the clinics to maintain on permanent and uninterrupted night duties (24/7) a veterinarian, a technician and students should be supported by the Faculty and University. The emergency service should be staffed by veterinarians on-site 24 hours. Interns should be involved in running the service (thus, a rotating clinical Internship should be established – see “Postgraduate Education”). For future developments in the emergency and critical care field, Diplomates might be recruited to create a centre of excellence within the new state-of-the-art Small Animal Teaching Hospital. Illuminated signs should be posted, indicating clearly the path to and the location of the Emergency Service.

Measures should be taken to render communication with referring veterinarians (and probably also with clients) more efficient. A charter should be drawn up for referring veterinarians containing mutually agreed procedures for collaboration with the teaching hospital. Such a charter should be published on the web site.

Plans should be made to increase the caseload in farm animals. Establishment of a section of farm animals within the Large Animal Veterinary Teaching Hospital and recruiting a professor for ruminant medicine and surgery might increase the incentive to attract farm animals.

4.5. FOOD HYGIENE & TECHNOLOGY AND VETERINARY PUBLIC HEALTH

Questions to be covered:

1) *Briefly comment on structure of practical training i.e. practicals, slaughterhouse, processing plants etc.* ***(see text)***
2) *How is food hygiene course linked to animal production, pathology, pharmacology & toxicology incl. residues and withdrawal times and parasitology?* ***sufficiently linked (see text)***
3) *Is training mostly internal on-site or external?* ***Theoretical training and food microbiology practicals on-site, meat inspection exercises external (as it SHOULD be)***
4) *How is inspection experience in milk, cheese,fish, meat, poultry offered?* ***product investigations: laboratory fashion; milking hygiene: farm; meat inspection in slaughter line.***
5) *Do all students have training in the slaughterhouse?* ***Yes***

4.5.1. Findings

The course in Food Hygiene and related mandatory subjects as stipulated in EU Regulation 2004/854 (Annex 1, Chapter IV on professional qualifications for Official Veterinarians) are provided predominantly by the Department of Veterinary Disease Biology (DVDB), with certain specific elements supported by teaching staff of the department of Large Animal Sciences.

The documentation made available and further information provided during follow-up discussions with the responsible teachers has convinced the team that the essential curricular elements are in place at LIFE.

Although some of the observations on the Food Hygiene course elements relate to the still existing 2005 curriculum, the 2009 curriculum approach shows evidence of increased cooperation across departments so as to present Veterinary Public Health to students in a more holistic fashion.

It should be noted that the training in specific hygiene aspects relating to poultry production is provided by poultry specialists within the DVDB. For the past couple of years, teaching excursions to poultry processing plants within the core programme have no longer taken place.

Apart from laboratory practicals familiarising students with the microbial analysis of foods of animal origin (meat, milk and dairy products, fish), the Danish Meat Trade College offers the students training in meat inspection and plant hygiene auditing procedures. Small groups of 6 students, intensively supervised by an expert veterinarian are exposed to a total of 60 to 80 pig carcases, all of them processed at an extremely slow conveyor speed, allowing students to pay detailed attention to inspection of individual carcases and organs. This unique set-up is possible because this particular slaughter line has been specifically designed for training slaughter and meat processing to junior operatives to be employed by the Danish meat industry.

The above unit is under reconstruction, as a result of which meat processing at the moment of the visit was restricted to carcass dressing, refrigeration and breakdown into primals. However, it is planned that from January 2011 onwards the old plant will give way to an entirely new unit, including further industrial processing steps (cutting, deboning, portioning, packaging of fresh meat, and further technologies used for meat products manufacture). The Faculty is very fortunate to be able to rely on such a demonstration unit and the expertise of its staff members.

In addition to the above unit, students (12 students per group under the supervision of an expert veterinarian) are exposed to beef slaughter and diagnostic coding of slaughterhouse material in a commercially run beef slaughter plant and are familiarised with on-site risk management (HACCP) strategies.

Basic training in milking hygiene and raw milk safety assurance is provided at the dairy farm by the staff of the Department of Large Animal Sciences.

4.5.2. Comments

All of the 22 requirements suggested in European legislation for veterinarians serving in a control function were scrutinized and the Copenhagen veterinary staff has considered the degree of detail with which veterinary students need to be confronted during undergraduate training. Thus a basic level of knowledge is provided for all students, based on lectures series, seminars and practical exercises during the BSc and MSc programmes (e.g. 'Microbial Food Safety' in the 2nd year, some legislative aspects during the course 'Veterinary Jurisprudence' in the 3rd year).

4.5.1. Suggestions

None

4.6. ELECTIVES, OPTIONAL DISCIPLINES & OTHER SUBJECTS

Questions to be covered:

*List available electives **(see text)***

4.6.1. Findings

In the current 2009 veterinary MSc curriculum there are four major electives or tracking programmes, 26.5 ECTS (16 weeks) each, to be taken in the second half of the fifth year (page 22 of SER1):

- Equine clinic
- Advanced companion animals
- Herd health and veterinary public health; within this elective, choices between two "profiles" are possible: herd health or veterinary public health
- Biomedicine

4.6.2. Comments

One critical point in designing a veterinary curriculum is the balance between depth and breadth; in other words allowing a certain degree of specialisation and offering enough training across disciplines and species to justify a general license after graduation. The current veterinary curriculum at LIFE appears to be such a workable compromise.

One inevitable consequence of any kind of tracking is that, almost certainly, not all students can get enrolled in the track of their first choice (usually small animal or equine medicine).

4.6.3. Suggestions

None

5. TEACHING QUALITY & EVALUATION

5.1. TEACHING METHODOLOGY

1) *Brief summary of teaching methodology used **(see text)***
2) *Are specific learning objectives set for subject and courses? **Yes***
3) *Do students work from teachers`scripts or textbooks or other information technology form? **(see text)***
4) *Is problem-oriented teaching used? **Yes.***

5) *How are courses and teaching evaluated?* ***(see text)***
6) *Is teaching mostly theoretical or has practical application a higher rank of importance?* **Practical application has a higher rank of importance.**
7) *How much real-life clinical exposure opportunity is offered i.e. hands-on work, 24-hour duty, acute cases, case responsibility, case follow-up, interaction with clients, practice management etc.?* ***(see text)***

5.1.1. Findings

LIFE uses a very progressive mix of teaching methods that include lectures, case studies, problem-based learning, e-learning (all students are expected to have computers, and a uniform learning management system [ABSALON] is used). Lecturers are free to choose their own didactic methods, but a "constructive alignment of teaching methods, learning goals, and exam methods must exist" (page 36 of SER1). Not all options offered by the software Absalon are in use (yet). Also because the University didn't pay for the maintenance and support component of the complex programme, users have run into temporary problems that require greater specific expertise with Absalon than is available on site.

The IT and communication technologies in place are impressive and used to the advantage of the students (e.g. visual and acoustic communication between Taastrup and Frederiskberg campuses; interaction between students and the teacher in clinical pathology via microscopes, cameras, computer and SmartBoard).

The day 1 skills outlined by the RVCS (Royal College of Veterinary Surgeons) and EAEVE/FVE are adopted by the establishment, and categorised into groups pertaining to individual courses. Students feel confident that they know what knowledge and skills they are expected to acquire and that they will acquire them.

Each course is evaluated by the students using an electronic survey at the end of the course (page 40 of the SER1). As Danish law does not permit making course evaluation mandatory, the establishment can only encourage students to participate in course evaluations. These evaluations are discussed semi-annually by the Departmental Teaching Committee. Participation of students in evaluations has dropped since the introduction of Absalon.

At the beginning of each course, a reference list is offered. Textbooks, handouts, and any digital learning materials (uploaded onto the learning management system –Absalon) are used.

In both the Small Animal Clinic and the Large Animal Hospital, students are exposed to cases, do hands-on management of cases and interact with clients.

5.1.2. Comments

The training of students in this establishment could serve as a role model for other veterinary schools.

5.1.3. Suggestions

Customer support for the use of ABSALON should be offered, either by the distributor or by qualified IT personnel of the University.

FOR ADDITIONAL INFORMATION SEE STUDENT'S REPORT

5.2. EXAMINATIONS

Queries to be covered:

1) *How often are students examined and when?* ***(see text)***
2) *Are there external examiners?* ***Yes***
3) *How many times can a student retake?* ***3 times***
4) *Are examinations structured or piecemeal?* ***Structured***
5) *Is the examination system effective and does it requires students to have to sit and pass examinations in basic subjects and foundation subjects before continuing on to the later disciplines?* ***(see text)***

5.2.1 Findings

A series of Danish Ministerial Orders on exams regulates the student assessment system. Exams are generally held in the weeks free of teaching, i.e. for ordinary exams, the last week of the blocks, and for re-exams, within the interim week.

One third of the exams must include an external examiner approved by the Ministry of Science, Technology and Innovation. BSc and MSc theses must be assessed by an external examiner.

Students have a maximum of three exam attempts, but in unusual circumstances, the University may allow for two additional attempts.

The veterinary curriculum comprises several methods for examinations e.g. written papers and multiple choice tests (written or web-based), project reports and presentations, oral exams (a limited part of the total exams), practical tests, clinical exams, competence-based weekly or monthly assessment of students' progress in meeting the course requirements and portfolios. Course attendance (minimum 80%) is used in practical teaching modules in combination with the exam methods mentioned above. The exam method is described in the individual course plans and must be approved by the Veterinary Study Board. External examiners are used in five of eighteen veterinary BSc courses, including the BSc thesis (adding up to 62.5 ECTS of 180 ECTS), and in three of ten MSc core courses, including the MSc thesis (adding up to75 ECTS of 150 ECTS).

Grading can be either pass/fail or based on a 7-point grading scale equivalent to the ECTS 7-point letter scale (which corresponds to the US grading system). Pass/fail grading may be used, as a maximum, in one third of the courses, and the 7-point grading scale must be used, as a minimum, in two-thirds of the courses in the BSc or MSc programmes, respectively (based on ECTS-sum)Veterinary BSc students must pass all first-year course exams within 2 years from the date of enrolment and must complete the BSc programme within 5 years from the date of enrolment. MSc students must complete the MSc programme within 5 years. Furthermore, all BSc and MSc students enrolled from 2009 and onwards must show a progress of study equivalent to 30 ECTS within a 2-year period.

5.2.2. Comments

On the whole the examination system appears to be properly structured.

Teaching staff is pleased with the system of having an external examiner in 30% of the exams, and students are quite satisfied with the present exam system.

5.2.3. Suggestions

None

FOR ADDITIONAL INFORMATION SEE STUDENT'S REPORT

6. PHYSICAL FACILITIES & EQUIPMENT

6.1. GENERAL ASPECTS

Questions to be covered:

1) *Brief description of facilities with observations on age, suitability etc.* ***(see text)***
2) *Adequacy of lecture rooms, laboratory and dissection/necropsy halls?* ***(see text)***
3) *Vehicle availability to transfer students from site to site or to external establishments?* ***(see text)***
4) *Health and safety items i.e. biohazard warnings, fire extinguishers, eye washes, sluices, chemicals, medicines and dangerous drugs storage?* ***(see text)***

5) *Adequate facilities for training in food hygiene, carcase handling, access to slaughterhouse, the provision of laboratories for microbiology, toxicology, organoleptics and residue work?* ***(see text)***
6) *Comment on suitability of site in terms of size, area, local animal caseload, access, transport etc. and availability of suitable equipment for teaching and research?* ***(see text)***

6.1.1. Findings

Many activities of the Faculty of Life Sciences are performed in two different locations:

- Frederiskberg Campus: located in the center of Copenhagen. It covers 17 hectares and includes the lecture rooms and laboratories for practicals in basic subjects and sciences, dissection and necropsy rooms and the small animal teaching hospital. A map of this Campus is offered in Appendix 5 of the SER1 (page 94).
- Taastrup Campus, located some 20 km west of Copenhagen. It covers 220 hectares and includes the Large Animal Teaching Hospital and the Research Farm.

All these premises are described in detail on pages 43 to 49 of the SER1.

A free shuttle bus is offered to the students and staff to connect the Frederiksberg Campus and Taastrup Campus twice in the morning, once at noon and once in the afternoon.

The Faculty has agreements with bovine and swine slaughterhouses for the teaching of food hygiene and food safety. There is also access to a number of food processing companies for meat, milk, cheese and fish products

The buildings are in a good condition. The Faculty has sufficient premises for practicals but only one auditorium large enough to place all students during lectures (200 places) is available. Also there is a need of more rooms for work in small groups. The lecture hall and laboratories are equipped with computers and projectors, so in all lectures, practicals and seminars computer aided presentations can be given.

In the dissection room anatomy practicals are based on plastic models, skeletons, and fresh organs and carcasses (from slaughterhouses) of the main domestic species. Formalin-fixed foxes are used for dissection practicals (1 fox/4-6 students) after 6 months of washing in two baths of ethylic alcohol to avoid any exposure of the staff or students to formalin. Moreover, a sophisticated expensive system of airflow running from the ceiling to the floor is in place.

Both necropsy rooms are equipped with state-of–the-art equipment where biosecurity measures are fully guaranteed. The largest necropsy room is video linked with the Large Animal Hospital to allow for follow up of any given case.

Safety measures and biohazard warnings are in place in every laboratory following the strict Danish regulations on the subject and apply equally to staff and students. Safety supervisors are appointed among the academic and support staff for each department. The team verified that all students are instructed in safety procedures prior to their work. Access for disabled people is offered in all buildings.

Students have Wi-Fi connection available in the different complexes at both Campuses.

For descriptions of cafeterias, library, student service centre, bookshop, rooms for students to sleep in the Large Animal Hospital and computer rooms, see student' report

6.1.2 Comments

In general the internal shuttle bus service covers the needs of the Faculty but the students are in need of additional service from the Large Animal Clinic in Taastrup to Frederiksberg early in the morning to promote the attendance to lectures of the students on night duties.

The laboratories used for practicals are very well equipped and students can do individual work comfortably.

All organs and carcasses used in Anatomy and Necropsy are stored inside plastic containers in a cold room until their periodical removal by the company in charge of the waste management, contracted by the University.

In the necropsy room, very good facilities to prevent formalin exposure of the students and staff were seen. Entrance of students and staff are independent through changing rooms. Students are protected by a white labcoat as well as surgical gloves, boots and a protective apron.

Biohazard warning signs were adequately placed where they are required as were fire extinguishers and eye wash facilities.

6.1.3. Suggestions

The high standard of the Faculty requires more lecture halls large enough to accommodate all students of the course and more small rooms for work in groups.

FOR ADDITIONAL INFORMATION SEE STUDENT'S REPORT

6.2. CLINICAL FACILITIES & ORGANISATION

Questions to be covered:

1) *Make brief overview of facilities indicating departmental responsibilities* ***(see text)***
2) *Are there diagnostic laboratory facilities and do they carry out external work?* ***Yes***
3) *Comment on clinical facilities and organization of clinical services.* ***(see text)***
4) *Is there a 24h emergency care service, adequate hospitalization/treatment? Isolation facilities and/or mobile clinic?* ***Yes***
5) *Are there possibilities for additional animal materials from stables, farms, kennels, game reserves etc?* ***Yes***

6.2.1. Findings

The Large Animal Hospital is a new large state-of the-art facility. It is under the responsibility of the Department of Large Animal Sciences. The Small Animal Clinic is in the process of reconstruction and substantial expansion. Upon completion, it will also be state-of-the art. It is under the responsibility of the Department of Small Animal Clinical Sciences.

There is an impressive Diagnostic Laboratory that also carries out external work.

For descriptions of Emergency service see Section 4.4.1 above.

6.2.2. Comments

Any veterinary school would certainly be envious of the quality of the clinical facilities.

6.2.3. Suggestions

None

7. ANIMALS & TEACHING MATERIALS OF ANIMAL ORIGIN

Questions to be covered:

1) *What sources are available which provide access to animal material?* ***(see text)***
2) *Is there a working farm where students can do practical work in the animal production subjects?* ***Yes***
3) *Ratios students graduating : clinical caseload pets / livestock / necropsies* ***(see text)***
4) *Adequate fresh chilled or prepared material for anatomy?* ***Yes***
5) *Adequate necropsy material and is it balanced?* ***Yes***
6) *Are adequate clinical materials available to enable staff to maintain or develop their skills and is there a reasonable balance between small animal and large animal cases?* ***Yes***

7) *Are the students given adequate exposure to slaughtering of various species as well as to materials for supporting food hygiene training?* ***Yes***

7.1. Findings

For Anatomy (SER1 page 51) enough fresh organs of large animals obtained from slaughterhouses and fresh cadavers and carcases of ruminants, equines and pigs are used for dissection purposes. Other stored materials used in Anatomy practicals are bones, skeletons and dried organs, as well as formalin fixed, ethanol-washed foxes and specimen of horse limbs..

For Necropsy (SER1 page 51), supply is dependent upon the cadavers of companion animals stemming from the deceased or euthanized patients at the Small and Large Teaching Hospitals. Large animals cadavers come from farms only by referral from private practitioners.

Necropsy caseload is shown is Table 7.1.2 of SER1 (page 51). Students perform a good number of necropsies on poultry, equines, pigs, ruminants, and companion animals. The students are also exposed to a high number of pathological viscera condemned from slaughterhouses.

For the course in nutrition approximately 4 cattle, 20 pigs, 5 horses, 3 layers and one sheep housed at the animal facility Rørrendegård of LIFE are demonstrated to the veterinary students. Furthermore, the Large Animal Clinic has a small herd of sheep (5 animals).

On other sites the institution has access to a herd visit (cattle and pigs) in the course on Animal Genetics; training in herd health subjects is performed at private farms in cooperation with practising veterinarians. Dairy herds are supplied by practices on Zealand. Herd visits with students are carried out approximately 40 times a year. The dairy herd "Assendrup" has signed a contract with LIFE, providing access to students and researchers (e.g. for master thesis projects).

For clinical materials see Section 4.4 above.

For materials supporting food hygiene training see Section 4.5 above.

7.2. Comments

With regards to basic sciences, clinical subjects, animal production and food safety subjects the number of animals or teaching material of animal origin to which the students are exposed can be considered satisfactory.

Ratio 11 is barely satisfactory because food-animal consultations are mainly done outside the Faculty (see R12, page 56 of SER1). Plans are in place in case the farm animal case loads continue to decline (e.g. contracts with private practices or establishment of an outstation). The other ratios are more than satisfactory.

7.3. Suggestions

None

8. LIBRARY & EDUCATIONAL RESOURCES

Questions to be covered:

1) *Brief overview of library facilities* ***(see text)***
2) *Number of journals subscribed to and on-line services?* ***(see text)***
3) *Exchanges with other university libraries?* ***Yes***
4) *Central library indexing?* ***Yes***
5) *Departmental libraries, accessible easily to students?* ***Yes***
6) *Are journals, periodicals, standard texts sufficient?* ***Yes***
7) *Is the balance teaching: research acceptable?* ***Yes***
8) *Are the opening hours student-friendly and are there adequate staff?* ***Yes***
9) *Do students use the library well and are they trained to use it?* ***Yes***
10) *Do students really have access to departmental libraries?* ***Yes***

8.1. Findings

Details of the library are to be found in the SER1 on pages 58-59.

The main library comprises a big meeting area and a rather small quiet area. The main library offers books in basic sciences, clinical sciences, and other professional fields and is equipped with IT facilities including free printers.

There also some small institutional libraries at the different departments in the Faculty that allow students access for consultation and loan of books.

All students participate in a training course in order to use the library.

There exists an e-learning system and a "virtual campus" called Absalon from which texts and videos can be downloaded by students. Teachers are required to put lecture material online, using Absalon, one week ahead of time.

8.2. Comments

The library has many textbooks which are regularly borrowed by the students, but most of the students buy their own (6-8 books/year) with the national subsidies they receive from the government. There seem to be adequate number of copies. The students generally scan from the textbooks for free; photocopies are not free of charge.

The library is set up for access to virtually all major scientific databases: local, regional, national and international.

Students are satisfied with the staff and the access/ services provided by the library but demand to extend the opening hours, particularly during exam periods.

The quiet area is not separated from the rest of the library, so some students feel that there should be more privacy in order not to be distracted.

8.3. Suggestions

Opening hours could be extended during exam periods.
The quiet area should be enlarged with more study places and be also physically divided from the other, noisier part of the library.

FOR ADDITIONAL INFORMATION SEE STUDENT'S REPORT

9. ADMISSION & ENROLMENT

Questions to be covered:

1) *Is a selection procedure in operation and is it legal?* **yes, based on national regulation**
2) *Is there a "numerous clauses" and what are the criteria used?* yes, 180 students maximum ***(see text)***
3) *What is the link between budget and the number of students?* ***See finances above 3.1***
4) *Does the intake take account of the national need for veterinarians?* ***Yes***
5) *Does the admission procedure result in students who have the aptitude, knowledge base and motivation for veterinary studies?* ***Yes***
6) *Does the admission procedure take into account the limitations of the resources available?* ***Yes***
7) *Is there a high drop-out rate and what are the reasons?* ***No***
8) *Does the admission process result in access inequalities?* ***No***

9.1. Findings

All Danish students who successfully passed the qualifying examination and those foreign students whose qualification has been confirmed by examination procedures considered similar are, in principle, eligible to enrol.

LIFE admission strategy is based on a *numerus clausus* set at 180 students. These are selected based on a quota system as follows:

1) Quota 1: a total of 90 students with the highest academic grades scored in their qualifying exam are admitted solely on this basis.
2) Quota 2: the remaining 90 students are selected on the basis of a stepwise selection procedure including a multiple-choice test (weighted 1/3) and an interview by a screening panel assessing the student's motivation for entering the veterinary profession (weighted 2/3).

The team was struck by the decrease in drop-out rate between the 2005-2006 period and today (i.e. a decrease in BSc drop-out rate from approximately 10% to a negligible rate in 2009. Thus, apparently, the new quota procedure, introduced in 2008, has functioned well.

9.2. Comments

The Faculty apparently is not concerned about the increase in student admissions over the last years.

9.3. Suggestions

The planned anglicising of the MSc curriculum should also be considered from the financial point of view: that is, a parallel-run Danish and English MSc curriculum could be a significant source of revenue if students enrolled in the English-speaking curriculum would pay a European-wide competitive tuition.

FOR ADDITIONAL INFORMATION SEE STUDENT'S REPORT

10. ACADEMIC & SUPPORT STAFF

Questions to be covered:

1) *Ratio of teaching staff:students is?* ***Good***
2) *Ratio of teaching staff to support staff is?* ***Good***
3) *How and by whom are all staff appointments and staffing levels decided?* ***(see text)***
4) *Percentage of staff who are veterinarians?* ***(see text)***
5) *Comment on staff ratios in relation to the SOP.* ***(see text)***
6) *Comment on staff shortage or mis-proportion* ***(see text)***
7) *Can staff move within the establishment?* ***(see text)***
8) *Are posts which fall vacant automatically filled or must they be fought for?* ***(see text)***
9) *Are certain staff able to be flexibly deployed i.e. for clinical services etc.?* ***(see text)***
10) *Does the establishment encourage staff to acquire additional skills and training?* ***Yes***
11) *How free is the establishment to decide staffing levels and benefits?* ***(see text)***

10.1. Findings

Staff is allocated to the Faculty/departments either directly following biannual negotiations with the Management or by way of a departmental decision to allocate or reallocate staff members financed directly by the department. It should be kept in mind that each department receives a set of funds every year on January 1st to cover all expenses (salaries, investments, equipment, animals etc.), and the department has the right to make changes in the staff composition, with the exception of full professorships. These are always negotiated with and finally decided by the Faculty Management.

The academic staff comprises 153.7 full-time academic staff (FTE). The percentage of veterinary surgeons is 56% of total FTE. Total support staff is 247.2 FTE.

10.2. Comments

The Faculty in Copenhagen has an enthusiastic, dedicated and competent teaching staff with an open ear for suggestions for further improvement.

The ratio of total academic FTE to number of undergraduate students is satisfactory. The number of academic staff is sufficient for both theoretical and practical activities.

The ratio of teaching staff to support staff is satisfactory

As each department receives a set amount of funds every year; employment of additional staff has to be paid from service income (e.g. from revenue from clinical or diagnostic work). This means that the departments have a certain autonomy in staff employment. That is, Departments can also negotiate salaries to some extent.

The establishment encourages staff to acquire additional skills and training.

The increase in hands-on clinical training (in small groups) has led to a substantial increase in the teaching obligation of clinical staff, which, in turn puts them at a disadvantage compared to staff in basic research units.

Support staff is mostly satisfied with their work, job security and involvement in student training.

Both academic and teaching staffs are highly motivated in doing their jobs.

10.3. Suggestions

None

11. CONTINUING EDUCATION

Questions to be covered:

1) *Is Continuing Professional Education (CPE) in the objectives?* ***Yes***
2) *Is a CPE programme in place?* ***Yes***
3) *Who is the CPE programme aimed at (practitioners, state veterinarians, specialists, production animal/herd health veterinarians, small animal veterinarians)?* ***(see text)***
4) *How is the CPE structured?* ***(see text)***

11.1. Findings

Proof of continuing education is not mandatory for Danish veterinarians.

The Faculty of Life Sciences cooperates with the Danish Veterinary Association in the development of many courses for practitioners within the major fields of the veterinary profession (see pages 68-69 of SER1).

11.2. Comments

The continuing education activity of the Faculty of Life Sciences provides a good example of cooperation between University and Veterinary Association.

11.3. Suggestions

None

12. POSTGRADUATE EDUCATION

Questions to be covered:

1) *Outline the types and structure of post graduate research training* ***(see text)***
2) *How many interns and residents are enrolled?* ***(see text)***
3) *Does a Masters or PhD programme exist and what structured training is given?* ***Yes (see text)***
4) *Are there minimum publication requirements for postgraduates?* ***Yes***

12.1. Findings

Residency programmes are not part of the formal training structure in the Danish university system, where emphasis has been on research education (PhD programmes). Nevertheless, a few residency

programmes have been established. Those programmes are approved by the European Board of Veterinary Specialization, and the residents receive a salary comparable to that of assistant professors. Some of the residents are financed through industry or partly through grants.

The position of a “resident” is still unbeknown to the financial administration of the University and the Government; so is the position of the “clinical intern”. Therefore, budgeted posts and salaries for such positions are presently unavailable. There is no financial remuneration foreseen for staff specialising and acquiring the title of a European or American Diplomate.

In Denmark, all PhD students are enrolled within the same PhD framework. The PhD programme has a duration of 3 years and consists of the following activities:

• Research – the research project takes up most of the time

• Teaching and dissemination

• Participation in PhD courses, for approximately 6 months of study (30 ECTS)

• Writing articles and the PhD thesis

• A stay at another research institution, possibly abroad

Each PhD student has a principal supervisor who is responsible for the entire, individual PhD programme. Additional supervisors are allowed, if necessary.

At the end of the study period, the PhD student submits the thesis to an assessment committee, which consists of three members who must be at least at the associate professor level. It is not mandatory that the PhD theses contain published papers, but usually at least one published paper is included in the thesis, and most of the supervisors encourage the PhD students to publish at least three papers during the elaboration of the thesis. After having defended the thesis in public, the PhD degree is awarded.

In 2009, 207 PhD students were enrolled at LIFE. Thirty-four out of the 207 held a DVM.

The Faculty of Life Sciences currently offers the following three MSc programmes of 60 ECTS each for graduate veterinarians (1 year full time or many years part time):

- Master of Veterinary Public Health
- Master of Laboratory Animal Sciences
- Master of Food Quality and Food Security

A Master programme in Companion Animal Clinical Sciences is being implemented

12.2. Comments

It is, without a doubt, a positive objective for LIFE to aim at achieving enrolments at a PhD/DVM graduation ratio of 25%, and to achieve this objective, has therefore allocated 28 fully financed PhD scholarships to DVM holders for 2010.

Supervisors advise students at the beginning of their PhD studies to learn about each student’s expectations during and after the PhD programme and to give each student valuable pieces of advice to facilitate their studies.

There are also monthly meetings of the PhD students in order to exchange impressions as well as pass on information from more advanced students to students who are at the beginning of their PhD programme.

12.3. Suggestions

A financial sound basis should be generated to establish and maintain residency and rotating internship programmes on a much larger level than currently exists in the clinics. Also, European specialisation in all EBVS listed disciplines should be promoted by recruiting Diplomates and by creating incentives for keeping residents on as staff once they have obtained Board certification.

FOR ADDITIONAL INFORMATION SEE STUDENT’S REPORT

13. RESEARCH

Questions to be covered:

1) *Briefly outline the research commitment and concepts* ***(see text)***
2) *Is there sufficient use of existing research to introduce undergraduates to the concepts?* ***Yes,*** **all BSc and MSc theses based on active participation in running research projects**
3) *Is the research effort cohesive or fragmented?* ***(see text)***
4) *Is there a clear research strategy within the establishment?* ***Yes***

13.1. Findings

LIFE's research is oriented in a biomedical fashion (i.e. decidedly establishing a relationship with human medicine). The Faculty has identified 3 major research programs:

- SHARE (synergy in human and animal research with an earmarked budget) in which also the Faculty of Health Sciences also participate.
- Animal Models and Animal Health, identified as significant and currently shortlisted for potential Faculty funding, including allocation of PhD stipends for students.
- Food safety (including zoonoses), which will follow an interdepartmental, interdisciplinary approach and in all likelihood will receive similar Faculty funding.

A so-called 'Research and Innovation Council' has been established and is headed by the Associate Dean for Research (ADR). The members of the Council have been appointed by the ADR on the basis of personal research excellence (output based). Care has been taken to assure that all departments are represented in this Council. The Council's major tasks include developing a Faculty-wide research strategy and advising on the Faculty's PhD policies.

13.2. Comments

LIFE aims at recruiting at least 25% of the PhD positions from the veterinary graduate population.

The EAEVE/FVE team found that sufficient research programmes are in existence to cater for the mandatory veterinary BSc and MSc programmes, and that a significant number of these theses find their way into scientific publications, generally co-authored by the BSc and MSc. Students.

13.3. Suggestions

None

FOR ADDITIONAL INFORMATION SEE STUDENT'S REPORT

EXECUTIVE SUMMARY

The Veterinary School of Copenhagen was previously approved and was now undergoing the second evaluation in form of a combined stage 1 and Stage 2 visit.

The visit was extremely well and professionally organised.

Several structural, organizational and curricular changes have taken place in the recent past. The most outstanding change, perhaps, is the formation of the Life Science Faculty (LIFE) under whose umbrella veterinary, agricultural and pharmaceutical sciences are assembled. Advantages of the creation of LIFE are obvious from many standpoints and veterinary teaching, in general, has only benefitted. Nevertheless the team felt that some international visibility and identity of the veterinary aspect of the Faculty has been lost; although the faculty members, in general, did not share this impression, the recommendation is made to reintroduce the name of Veterinary School and to render a veterinarian responsible for the School on the high administrative level of the new Faculty.

Other recommendations are to establish rotating clinical internships, to increase the number of E(A)BVS Diplomates among the faculty and to increase the number of residency s and residents enrolled. Also, the 24 hours small animal emergency service shall be better staffed to work more efficiently during the second half of the night. Student rotations during those late hours should be made mandatory. Also, measures should be taken to further increase the case load in farm animal teaching. These shortly summarized recommendations do not in any way reflect serious deficiencies.

The Veterinary School of the LIFE faculty was, in all areas evaluated, not only far above required standards, in fact, the team unanimously felt that overall, the school is excelling as an exemplary European veterinary teaching and research facility. In short that is: state-of-the-art facilities, research-based and hands-on teaching, an equilibrated output oriented curriculum, a sound financial basis, a dedicated and enthusiastic staff and quality assessment procedures well in place and enacted.

The visiting team therefore recommends unanimously to award full accreditation to the Veterinary Departments of the LIFE Faculty (the Veterinary School of Copenhagen).

Decision by ECOVE: Full Accreditation.

ANNEX 1 INDICATORS

The EAEVE/FVE team verified that all indicators were adequately calculated by the Faculty and should be taken as in the SER1: R1-R5 (page 65), R6-R10 (page 31), and R11-R20 (pages 56-57).

ANNEX 2 LIST OF CATEGORY 1 DEFICIENCIES

After the site visitation of the veterinary programme of LIFE, the unanimous opinion of the team members was that no Category 1 Deficiencies were found.

ANNEX 3 STUDENT`S REPORT

4. CURRICULUM
4.1 General aspects
4.1.1: Findings
In the 5th year the curriculum is structured in a tracking system with four differentiation courses. The access to the two most popular tracking options (equine medicine and small animal medicine) is quite difficult because of the limited number of places in each of these differentiation courses.
4.1.2. Comments
The tracking system causes some internal competition among the students and has a negative impact on the students' social relations.
The students would welcome an increase in "hands-on" activity in the basic subjects although there is good use of the new technologies to improve the practical sessions and there are sufficient hands on activities in the MSc (4th and 5th year) curriculum.
4.1.3. Suggestions
None.

5. TEACHING QUALITY AND EVALUATION
5.1. Teaching methodology
5.1.1. Findings
The theoretical part of the curriculum is dominated by lectures taught predominantly with the aid of PowerPoint presentations and text that is made available in the Absalon system one week before each lecture.
The teachers encourage interactive learning, including self-learning, team work, project reports and discussions.
In the basic sciences subjects, the ratio of students to teacher is 20:1; new technologies are used to enhance the learning process.
In the Large Animal Hospital the students have no direct contact with the owner of the animal (primarily equine patients), so there is a lack in learning how to manage the relationship between the veterinarian and equine owners.
The Absalon system provides students with good on-line material including PowerPoint presentations with a voice explaining the lecture, videos, photos and E-books to support the learning process. In addition, students can receive personal tutoring via email by the Absalon system.
The team was able to watch the application of innovative techniques in clinical-skills teaching by using a toy animal to learn some basic surgery and animal medicine skills.
All departments open their doors to students who want to collaborate in research or other activities as supplementary education.
Courses are evaluated via the Absalon system; however, the participation rate leaves a bit to be desired (30% in some courses).
5.1.2. Comments
Although there is good teaching methodology, more contact between the student and the teacher in the practical lessons of some basic subjects is desired.

According to the opinion of the students, there occurs superfluous time waiting to be assisted during some practicals.
The participation rate in course evaluations offered through the Absalon system could most likely be improved by introducing anonymous feedback.
On the whole, students are happy with the teaching methodology and the quality of the teaching.

5.1.3. Suggestions

It would be of advantage to have more PhD students or technicians assisting in some of the practical lessons.
In the Large Animal Hospital students should have the opportunity to have direct contact with the clients.
The course evaluation system ought to be improved to ensure adequate feedback.

5.2. Examinations:

5.2.1. Findings:

Passing the practical exam is mandatory in almost all the subjects.

5.2.2. Comments:

External examiners are accepted by both the students and the teachers.

5.2.3. Suggestions:

No specific suggestions.

6. PHYSICAL FACILITIES AND EQUIPMENT

6.1. Findings

The Faculty offers good, modern facilities and equipment for staff and students.
The lecture rooms are comfortable, with sufficient plug-in for students laptops.
There exist several common places for students to have lunch or coffee; for instance two cafeterias, one is a canteen and the other a green house remodeled as a cafe, offering a discount to students. In addition, candy machines and fruit baskets are at the students´ disposal. A bar managed by students acts as a meeting point.
The students' association offers some rooms for meetings, and inexpensive material needed in practices (clothes, boots) is sold in a shop on campus.
The laboratories and the Small and Large Animal Hospitals are very well equipped.
Students have the opportunity to practice sports in the University.
A shuttle bus service for transport to the Large Animal Hospital is provided for the students. Two buses operate both in the morning and in the evening and taxis can be used at a reduced rate to take them to the train station if they miss the last bus. There is also the possibility to sleep at the hospital.

6.2. Comments

The "Green House" is good and has good quality food, but it is quite expensive for students.
The students' opinion of the canteen is that is expensive and the quality of the food isn't as good as they wish.
Students can book a meeting room for work in a team or individual study.
Students think that the transportation between the main campus and the Large Animal Hospital is enough most of the time, but could be better for those students undertaking the MSc thesis.

6.3. Suggestions

Improve the security in the Large Animal Hospital during the night (e.g. construct a boundary fence).

8. LIBRARY AND EDUCATIONAL RESOURCES:

8.1. Findings

The main library comprises a big meeting area with comfortable places for group study as well as individual work.
There is a rather small quiet area with 25 study places.
The main library provides students of the entire LIFE University with books in basic sciences, clinical sciences, and other professional fields. There are sufficient computers and power plugs as well as free printers to encourage students to scan book chapters instead of copying them. The option of copying books exists, but is, however, not free of charge. Good audio visual and information technology facilities are provided.
There also some small institutional libraries at the different departments in the Faculty. The students have access to those libraries and may loan books.

Students can search for books or journal articles and check availability online in the library data base. They have the option to either pick up the books themselves or ask the library staff to pick up the books for them. The loan period is one month, and if there is no one in line asking for the book it can be extended to six months. There exists also an automatic system to loan and return the books. During their first year at the university the students are trained how to use the library bases and how to research books and journal articles.
Teachers and students may make a request for the library to purchase certain additional books or journal; the final decision is made by the library staff.
The library has good relations with other libraries in the country as well as with the other Scandinavian countries; a special contract exists with Switzerland. Students can get any journal article from another library for free by mail.
The library provides sufficient copies of the books most in demand. In addition, students are subsidized by the government to buy texts.
There exists an E-learning system and a "virtual campus" called Absalon from which texts and videos can be downloaded. Teachers are required to put a lecture material online (on Absalon) one week ahead of each lecture.

8.2. Comments

According to the opinion of some students, the opening hours are not sufficient, particularly during exam periods.
Overall, the students seem to be happy with the staff and the access/ services provided by the library.
The quiet area is not divided from the rest of the library, so some students feel that there should be more privacy in order not to be distracted.

8.3. Suggestions

Opening hours could be extended during exam periods.
The quiet area should be enlarged with more study places and be also physically divided from the other part of the library.
Library staff should be allowed and encourage to take a more active part in the Absalon system.

9. ADMISSION AND ENROLMENT

9.1. Findings

In line with legal regulations, 180 students are admitted per year.
To be admitted through the second quota system, students have to pass a test and be evaluated through a personal interview with three people: one professor, one student and one veterinarian from the Danish Veterinary Association.

9.2. Comments

Foreign students need not pass an exam in Danish to be admitted to the Faculty.

9.3 Suggestions

None

12. POSTGRADUATE EDUCATION

12.1. Findings:

Usually at least one published paper is part of the PhD thesis. However, most of the supervisors encourage PhD students to publish at least three papers during the elaboration of the thesis, although the publication of papers is not mandatory.

12.2. Comments

Supervisors advise students at the beginning of their PhD to voice their intentions after the completion of their studies. There are also monthly meetings of the PhD students to enable them to exchange impressions and for more experienced students to pass on their expertise to the newcomers.
PhD students are encouraged to find their own funds to finance their research projects.

12.3. Suggestions

None