CURRENT STATUS

In Germany, veterinary education is regulated by a federal law, the so-called Tierärztliche Approbationsordnung (TAppO), or Certification Code for Veterinary Surgeons. The curriculum must follow the TAppO, which sets out the subjects, teaching hours, and examinations for undergraduate courses and thus provides a uniform, fairly rigid timetable for teaching in the five German veterinary faculties (Berlin, Giessen, Hannover, Leipzig, and Munich). The TAppO only allows 10% flexibility in the structure, timing, or organization of teaching. The prerequisite for any fundamental change in the veterinary education system is an amendment to the federal law, a procedure lasting several years. The current system of veterinary education is based on the code of 1999, which is an amendment of the TAppO from 1986.

In turn, federal law determines the annual admission of students to each faculty by measuring their teaching capacity and assigning a curricular value to individual disciplines, to the course as a whole, and to each member of the teaching staff. For many years admissions have been stable at about 900 students per year, approximately 85% of whom are female. The students are selected by a national office, primarily on the basis of their grades on the school leaving examination (the Abitur, or university entrance qualification). Currently, the national office makes 80% of selection decisions while individual faculties can make 20% of decisions based on interviews. In 2003, approximately 7,000 veterinary students matriculated in Germany. Veterinary students pay no tuition fees; the veterinary schools receive their budgets from the government only or from funding for research activities.

According to the TAppO, the objective of German veterinary education is an academically and practically trained veterinarian who is capable of practicing the veterinary profession responsibly and independently. Veterinary education must convey

1. fundamental veterinary, scientific, interdisciplinary, and methodological skills;
2. practical skills;
3. spiritual and ethical foundations; and
4. a professional attitude committed to the well-being of humans, animals, and the environment.

The organization of the veterinary curriculum in Germany is illustrated in detail in Figure 1. The standard veterinary degree program lasts 5.5 years (11 semesters), including academic/theoretical and practical work as well as examinations. Examinations are set by the state and administered by examiners approved by the government. Examinations must follow the format specified in the TAppO; they are generally oral, including practical and clinical examinations. The subjects of the different examination stages are shown in Figure 1.

Figure 1: Organization of the German curriculum

Figure 1. Lectures are given from April to July and from October to February. The curriculum is roughly divided into two years of pre-clinical studies and 3.5 years of para-clinical and clinical studies, each organized by discipline.

Subjects and teaching hours are laid out in the TAppO (see Table 1), which clearly defines the total number of hours for each subject. German veterinary education consists of 3,850 hours of compulsory and optional courses and 1,170 hours of practical training outside the lecture periods. As an example, Table 2 shows the general schedule of curriculum hours taken by all students in Giessen, with the distribution between lectures, seminars, and practical or clinical training. The total number of hours slightly exceeds the sum of hours defined in the TappO; the surplus is due to the extra clinical courses that the faculty in Giessen has incorporated in the local curriculum. The total of compulsory and optional courses must not exceed 33 hours per week.
In addition to the obligatory coursework, students have elective teaching. Instructors offer a broad list of elective courses in subjects such as exotic diseases, multimedia education, and molecular microbiology. Students must take a minimum of 308 hours in elective courses in order to obtain more specific knowledge. There is a large surplus (up to 100%) of total course positions available, so every student can easily cover the required number of course hours.

Problem-oriented learning is encouraged by a series of multidisciplinary seminars that link food hygiene or clinical medicine to other disciplines. In these seminars, one instructor from the clinical units or food sciences discusses problems on a given topic together with students and instructors from the pre- or para-clinical departments. Students must pass at least 252 hours in seminars with interdisciplinary subjects.

Although research is not part of the curriculum, undergraduate students can be introduced to research, if they show an interest, by joining a research team for a limited time. All academic staff are engaged both in teaching and in the research activities established within the different institutes and clinical units. Research activities are generally funded through competitively awarded grants. Although the intensive curriculum does not allow generalized student research activity, undergraduates can be involved in research via an elective placement in a research-oriented course, or by taking the required practical training in a clinical unit or institute, and thus have access to ongoing research projects.

**FUTURE PERSPECTIVES**

The uniformity of the German curriculum under TAppO eliminates the need for inter- and intra-faculty debate on the syllabus and hours and enables student exchanges among the different German veterinary schools. In comparison to the 1986 version, the current TAppO (1999) has introduced some significant improvements, such as interdisciplinary courses and electives. However, new demands and challenges to the veterinary profession, as well as new concepts of learning (e.g., e-learning), will require fundamental changes in teaching in the near future. Knowledge will continue to increase fast and, inevitably, will become too extensive for one individual to master. Therefore, the current aim of German veterinary education—a capable veterinarian with academic competence in almost every field of veterinary profession—cannot be maintained any longer. More specialization is needed to ensure high levels of professional competence. Stronger economic competition resulting from the increasing number of veterinarians and the need for more service to animal owners has increased demand for new subjects such as business management, personal and staff management, professional practice organization, and quality assurance systems. Further improvement of students’ ability to engage in scientific research is necessary, since research is currently the second largest field of veterinary activity, in which nearly 20% of all German veterinarians are involved.
The growth of knowledge and the continual reduction in the half-life of knowledge necessitate regular continuing education programs and in-service training at the postgraduate level. The aim of the new German curriculum should be to produce veterinarians who are more specialized as well as able and motivated to continue the learning process throughout their professional career. To reach this goal, the undergraduate course must be considered together with obligatory postgraduate training as a unified entity. Compulsory participation in regularly adapted and examinable education programs should be a program goal. Standards of postgraduate qualification, including a common central examination, should be implemented and harmonized, not on a national but, preferably, on a European or international level.

Efforts to reform the German curriculum (TAppO) have ensued in the past from modifications of existing regulations with the aim of adapting them for future tasks, but the concept of extrapolating future teaching requirements from past experiences ignores the rapid and continuous progress in the veterinary sciences. Therefore, a fundamental reorientation is necessary in German veterinary education.

NOTES


AUTHOR INFORMATION

Georg Baljer, Dr.med.vet., Dr.med.vet.habil., is a member of the VET 2020 Group of the EAEVE and Head of the Examination Board at the Veterinary Faculty in Giessen, Frankfurter Str. 89, D-35392 Giessen, Germany. E-mail: georg.baljer@vetmed.uni-giessen.de.

Martin Diener, Dr.med., is the former Dean of Study Affairs at the Veterinary Faculty in Giessen, Frankfurter Str. 100, D-35392 Giessen, Germany. E-mail: martin.diener@vetmed.uni-giessen.de.

Holger Martens, Dr.med.vet., is Head of the German Veterinary Medical Association and Dean of Study Affairs at the Veterinary Faculty in Berlin, Oertzenweg 19b, D-14163 Berlin, Germany. E-mail: martens@vetmed.fu-berlin.de.